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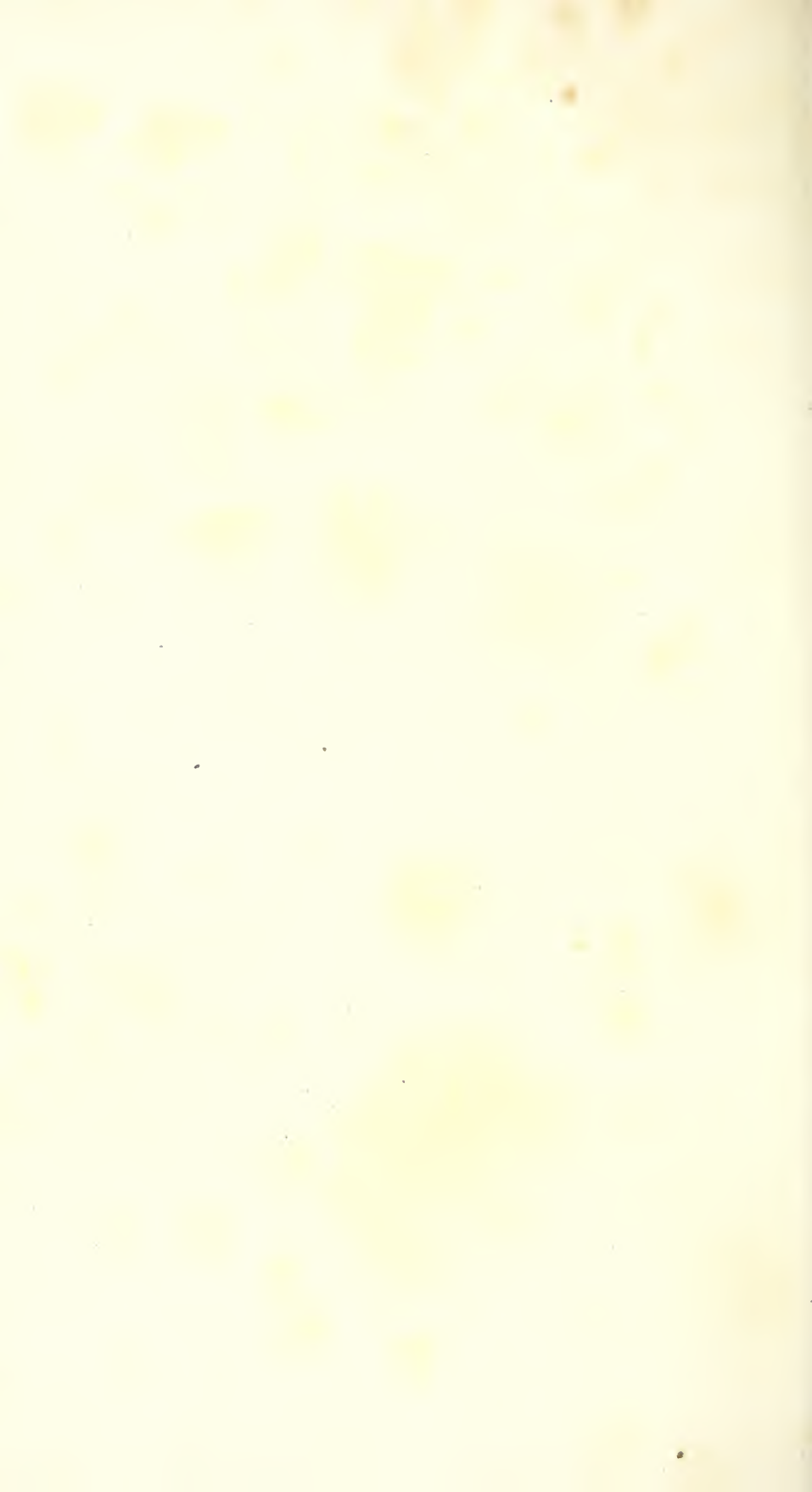
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ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS,
AND PLACES OF GROWTH.

TO WHICH WILL BE ADDED,

OCCASIONAL REMARKS.

BY

JAMES SOWERBY, F.L.S.

V O L. II.

L O N D O N:

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CAMPANULA hederacea.

*Ivy-leaved Bell-flower.**PENTANDRIA Monogynia.*

GEN. CHAR. *Cor.* bell-shaped, closed at the bottom by valves bearing the stamina. *Stigma* three-cleft. *Capsule* inferior, opening by lateral pores.

SPEC. CHAR. Leaves heart-shaped, five-lobed, on footstalks, smooth. Stem flaccid.

SYN. *Campanula hederacea.* Linn. *Sp. Pl.* 240. *Huds. Fl. An.* 97. *Witb. Bot. Arr.* 220. *Dicks. Dried Plants*, 56.

C. Cymbalariae foliis. *Raii Syn.* 277.

FEW plants exceed this *Campanula* in elegance, and yet it has never had the fortune to be well figured. The old authors represent its corolla very erroneously, and *Flo. Dan.* t. 330, is one of the worst figures in every respect that can be. Our specimens were collected on a bog near High-beech, Epping Forest, by Mr. Edward Forster, junior. This species was never before found so near London, though not rare in moist woods in the midland and southern counties, and very plentiful in Cornwall, from whence Francis Borone brought it to Mr. Dickson for his *Fasciculi of Dried Plants*. Though a bog plant, it is capable of cultivation, and is almost naturalized under a magnificent shrubbery of *Kalmias* in Kew garden. It flowers throughout the summer.

Its roots are perennial, fibrous, and slender, sprouting from various parts of the procumbent stems, which are matted together, and spread very far. The whole herb is pale, tender, and delicate, smooth, except a very few scattered hairs occasionally found on some of the leaves. Flowers solitary, on long terminal footstalks, a little drooping, fugacious, and soon withering after they are gathered. Segments of the calyx pointed and entire.

Linnæus's suspicion of this being a hybrid plant (*Am. Acad.* v. 3. 55) is unwarrantable. He supposes it may have been produced from some *Campanula* impregnated by *Veronica hederifolia*, and gives for reason that its leaves are quite foreign to those of others of its genus; yet surely they much more resemble the radical leaves of *C. rotundifolia* than those of this *Veronica*.



G A L I U M pufillum.

*Least Ladies-bedstraw.*T E T R A N D R I A *Monogynia.*GEN. CHAR. *Cor.* of one petal, flat. *Seeds* two, roundish.

SPEC. CHAR. Leaves about eight in a whorl, rough, linear, pointed. Flower-stalks forked. Fruit smooth.

SYN. *Galium pufillum.* *Linn. Sp. Pl.* 154. *Huds. Fl. An.* 69. *With. Bot. Arr.* 154. *Villars Dauph. v.* 2. 324. *t.* 8.

NEITHER Ray nor Dillenius seems to have noticed this species of *Galium*, unless it be what the latter intended by *Galium album supinum multicaule*, *Rupp. Fl. Jen.* 4. *Raii Syn.* 224. It does not well agree with *Ruppius's* description, which is however a very indefinite one, and it may nevertheless be the plant of Dillenius. This specimen was gathered in July last by Dr. Smith, at Matlock Bath, Derbyshire, where it grows abundantly, thriving much in the calcareous rocky soil originally deposited by the Matlock water. Mr. Hudson mentions the neighbourhood of Kendall in Westmoreland as its place of growth.

The root is perennial. Stems square, extremely numerous, from three to ten inches high, forming large tufts covered with innumerable milk-white flowers, very conspicuous at a distance. The leaves are tipped with a short pale bristle, and, as well as the stem, are generally, but not always, rough with short spreading hairs. They are not exactly linear, but rather lanceolate, from six to eight, or even nine, in a whorl, equally spreading; the lower ones so close together that they are almost imbricated; but that is by no means peculiar to this species. We have therefore omitted it in the specific character.

Our specimens agree precisely with those in the Linnæan Herbarium from *Monf. Gerard*, except that his are rather less. There is no certain figure of this *Galium* extant, except the indifferent one of *Monf. Villars*.



Galium verum L. 27. 102

GERANIUM lucidum.

*Shining Cranesbill.**MONADELPHIA Decandria.*

GEN. CHAR. *Style* one. *Cor.* of five petals, regular. *Nectary* five glands at the base of the longer stamina. *Fruit* beaked, separating into five arilli, each tipped with a long simple naked awn.

SPEC. CHAR. Stalks two-flowered. Calyx pyramidal, angular and rugged. Leaves roundish and five-lobed.

SYN. *Geranium lucidum.* *Linn. Sp. Pl.* 955. *Huds. Fl. An.* 304. *With. Bot. Arr.* 730. *Relb. Cant.* 262. *G. faxatile.* *Raii Syn.* 361.

THIS beautiful species grows in the same situations as the *G. robertianum*, on walls, moist rocks, &c. but is not so common, except in the mountainous parts of Great Britain. It is a brilliant ornament to the romantic dells of Matlock and Westmoreland, decorating many a thatched roof and mossy stone with its polished red stems and shining leaves, which often likewise turn red if exposed to much light. It flowers throughout the summer. The root is annual. We are obliged to Mr. Robson of Darlington for this specimen.

In the species before us the arillus of the seed has several rugged longitudinal ribs, and is hairy at the top. This part is very important in determining the species of *Geranium*, and has not yet been well attended to, or botanists would never have been at a loss to discriminate *G. molle*, *pyrenaicum*, *pufillum* and *rotundifolium*.





POLYGALA vulgaris.

*Milkwort.**DIADELPHIA Oelandria.*

GEN. CHAR. *Cal.* of five leaves, two of them wing-shaped, and coloured. *Pod* inversely heart-shaped, two-celled.

SPEC. CHAR. Flowers in a cluster, crested. Stems herbaceous, simple, procumbent. Leaves linear-lanceolate.

SYN. *Polygala vulgaris.* *Linn. Sp. Pl.* 986. *Huds. Fl. An.* 310. *With. Bot. Arr.* 754. *Relb. Cant.* 268.

Polygala. Raii Syn. * 287.

MILKWORT grows every where in dry heathy pastures and on rocks, flowering in June and July. Its perennial woody root throws out many spreading procumbent stems, clothed with deep-green smooth leaves, which vary much in size and figure. The flowers, commonly blue, are often white, flesh-coloured or purple, but in all cases marked with green lines. The permanent calyx turns at length wholly green, and wraps up the young pod, closing and drooping to protect it from rain. So the elegant fringed crest of the corolla shelters the stamina and pistillum, admitting air, but scarcely wet or insects.

An infusion of the herb, which is very bitter, taken in a morning fasting, about a quarter of a pint daily, promotes expectoration, and is good for a catarrhus cough. I tried it at Montpellier by the advice of Professor Gouan with success, and have since known it useful. *J. E. Smith.*





A J U G A Chamæpitys.
Ground Pine.

DIDYNA M I A Gymnospermia.

GEN. CHAR. Upper lip of the *Corolla* very minute, and much shorter than the stamina.

SPEC. CHAR. Leaves three-cleft, linear, entire. Flowers sessile, lateral, solitary. Stem diffuse.

SYN. *Teucrium Chamæpitys*. *Linn. Sp. Pl.* 787.
Huds. Fl. An. 247. *With. Bot. Arr.* 590. *Relb. Cant.* 220. *Dicks. Dr. Plants*, 9.

Chamæpitys vulgaris. *Raii Syn.* 244.

Bugula foliis imis linearibus, caulinis tripartitis.
Hall. Hist. n. 284.

COMMUNICATED by Mr. Edward Forster, junior, and Mr. Jacob Rayer, from Pursfleet in Essex, in April and May last. It abounds in sandy fields in Kent and Surry, but is otherwise a scarce plant.

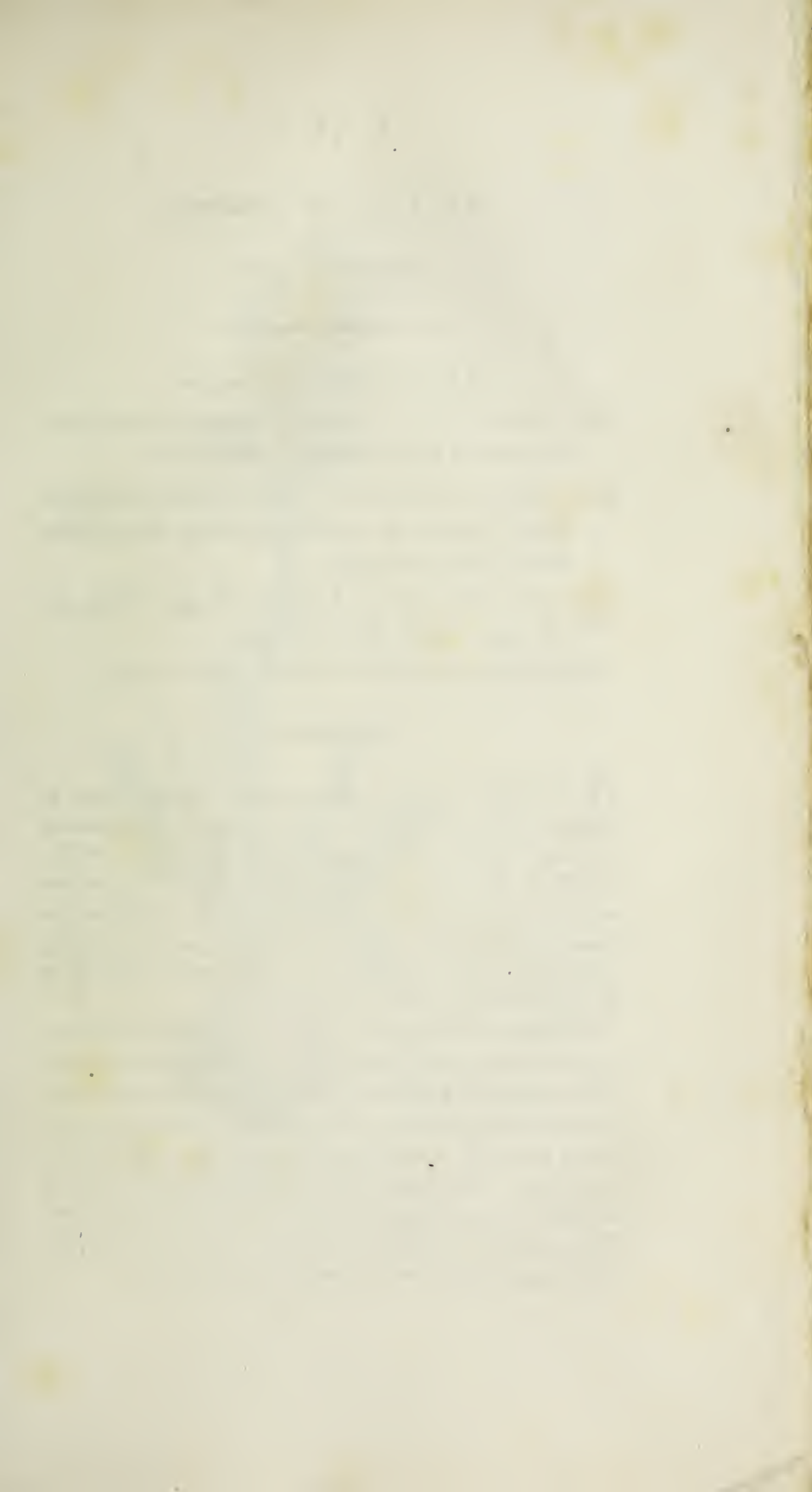
Root small, branched, annual. Stems much branched, spreading, square, often reddish. The first two or three leaves are entire; all the rest deeply three-cleft. The whole herb hairy, viscid, aromatic, and bitter. The corolla differs in structure from the genuine species of *Teucrium*; for the upper lip, instead of being deeply divided and divaricated, with the stamina projecting between its lobes, is very short and notched, exactly as it ought to be in *Ajuga*, to which genus, called by him *Bugula*, it is therefore referred by Haller. Owing no implicit obedience to any system or laws but those of truth and nature, as far as they are discernible, we adopt his alteration * because we think it a good one. In support of his opinion he quotes Guettard, who indeed says this plant is no *Teucrium*, but who would restore Tournefort's genus of *Chamæpitys*, only calling it *Iva* with Rivinus. Tournefort's reason for separating *Chamæpitys* from *Ajuga* (his *Bugula*) is, that its flowers are solitary, whereas those of *Ajuga* are verticillated; but this is a most trifling and unscientific difference, and not strictly constant. Guettard and La Marck (*Encycl.* 501) say, the true *Ajugas* are distinguished from the *Teucriums* by not having the calyx swelled on one side as the fruit ripens. This however is not true, witness *A. alpina* and *pyramidalis*, nor would it signify if it were. It must be acknowledged indeed, that the habit of *Chamæpitys* is unlike that of the *Ajugas* of Linnæus; but his *Teucrium Iva*, which belongs to the same genus, is the connecting link between them, by its pubescence and the denticulation of its leaves approaching *Ajuga alpina*, which is moreover a bitter aromatic plant.

* As Prof. Schreber has done, *Plant. Vertic. Unilab.* 19.



Verbena officinalis L.





S C I L L A autumnalis.

*Autumnal Squill.*H E X A N D R I A *Monogynia.*

GEN. CHAR. *Cor.* of six petals, spreading, deciduous.
Filaments of equal thickness throughout.

SPEC. CHAR. Leaves linear. Flowers somewhat corymbose, standing on naked ascending flower-stalks about their own length.

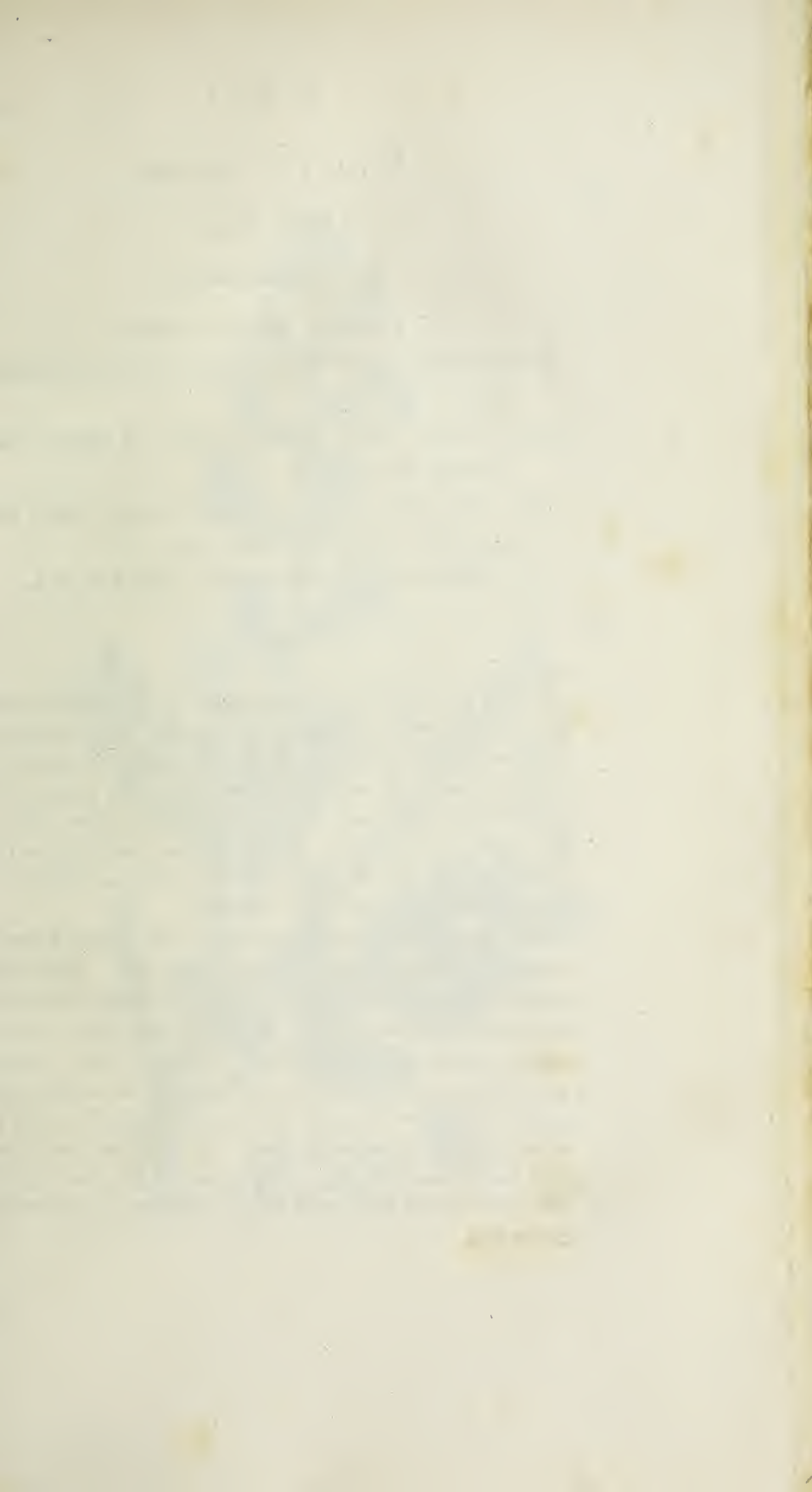
SYN. *Scilla autumnalis.* *Linn. Sp. Pl.* 443. *Huds. Fl. An.* 242. *With. Bot. Arr.* 349.

Hyacinthus autumnalis minor. *Raii Syn.* 373.

A NATIVE of dry pastures in the southern parts of England. The present specimen was obligingly communicated from St. Vincent's rocks, near the hot-well, Bristol, by Dr. John Ford, F. L. S. Owing to the moisture of the present autumn, 1792, it is more luxuriant than usual. The plant has formerly been found on several heaths near London, growing among short grass, and flowering in September, contrary to the nature of most bulbous plants.

The bulb is coated like an onion. Leaves numerous, spreading, two or three inches long, linear, obtuse, channelled, scarcely filiform, though so described by Linnæus. Stalks sometimes more than one, round, striated, erect, terminated by six, ten, or even twenty flowers in a corymbus, which is soon lengthened out into a spike. The partial flower-stalks always point upwards, and after flowering become pressed close to the principal one. They are perfectly destitute of bractæ. The petals are prettily variegated with blue and purple; the germen blue.





V I C I A fylvatica.

*Wood Vetch.*D I A D E L P H I A *Decandria.*

GEN. CHAR. *Stigma* transversely bearded on the lower side.

SPEC. CHAR. Stalks many-flowered. Leaflets oval. Stipulæ denticulated.

SYN. *Vicia fylvatica.* *Linn. Sp. Pl.* 1035. *Huds. Fl. An.* 318. *Witb. Bot. Arr.* 774.

V. fylvatica multiflora maxima. *Raii Syn.* 322.

THIS Vetch, hitherto supposed peculiar to the mountainous parts of England and Wales, has at length been found in a wood near Newmarket, by the Rev. Mr. John Hempstead, a very intelligent and industrious botanist of that place, from whom this specimen was sent us by William Matthew, Esq. in the middle of June last. It flowers from that time to the middle of August. Dr. Smith gathered it in the hedges and thickets behind Saxton's bath at Matlock.

The perennial root throws out many weak, zigzag, striated, and much branched stems, six or seven feet high, which climb among the neighbouring bushes by means of compound tendrils at the ends of the leaf-stalks. The leaflets are exactly oval, or rather a little obtuse, tipped with a minute bristle; stipulæ very deeply toothed. Flowers very ornamental, whitish, elegantly streaked with purple and greyish blue. The keel is generally white tipped with blue. The pods are lanceolate, pale brown, and smooth. They appear in July and August. Mr. Woodward's description in the Bot. Arr. is a very accurate one.



CARDAMINE impatiens.

*Impatient Ladies-smock.*TETRADYNAMIA *Siliquosa.*

GEN. CHAR. *Pod* bursting elastically, the valves turning back. *Stigma* entire. *Cal.* a little spreading. One *Gland* on each side, between the shorter stamina and the calyx.

SPEC. CHAR. Leaves pinnated; leaflets lanceolate, mostly cut. *Stipulæ* ciliated.

SYN. Cardamine impatiens. *Linn. Sp. Pl.* 914. *Huds. Fl. An.* 294. *With. Bot. Arr.* 685. vulgo *Sium minus impatiens.* *Raii Syn.* 299.

SENT by Dr. Smith from Matlock July 4th, 1792. It was gathered by the river side under a high perpendicular rock immediately below Saxton's bath. This is a rare plant in most places, though not so in Westmoreland and Cumberland.

Root annual. Herb about twelve or eighteen inches high, erect, pale and tender in appearance, with almost invisible flowers, and chiefly remarkable for its numerous pods, which discharge their ripe seeds with great force on the slightest touch or motion. The stem is angular and hollow, more or less zigzag. Leaves smooth, paler beneath; extended at the base into two narrow, acute, singularly ciliated stipulæ, by which the species is well distinguished from all others known. Linnæus at first described the flowers as being destitute of petals, but afterwards acknowledges he found some in a cultivated plant. Mr. Hudson justly observes that some flowers are without, and that in those which have them they are scarcely longer than the calyx, white, and of very short duration.

The taste of this species is pungent, like the rest of its tribe, bitterish and unpleasant. We do not know of its being applied to any use.



Trigonotis pedunculata L. 1793

T H L A S P I alpestre.
Alpine Shepherd's Purse.

T E T R A D Y N A M I A *Siliculosa.*

GEN. CHAR. *Pouch* notched, with many seeds : valves boat-like, their keels forming the border of the fruit : partition contrary to the valves.

SPEC. CHAR. *Pouch* inversely heart-shaped. Leaves glaucous, slightly dentated, embracing the simple stem ; radical ones on footstalks. Petals about the length of the calyx. Seeds numerous.

SYN. *Thlaspi alpestre.* Linn. *Sp. Pl.* 903.

T. montanum. Hudf. *Fl. An.* 282. *With. Bot. Arr.* 674.

T. foliis Globulariæ. Raii *Syn.* 305.

GATHERED by Dr. Smith July 4th last at Matlock, where it grows abundantly on the lime-stone rocks. 'Tis doubtful whether the root be more than biennial. Certainly Ray is mistaken in saying it creeps. The radical leaves form a thick tuft, out of which arises one central stem, rarely branched, which flowers early in summer ; the lateral stems are afterwards numerous, mostly unbranched, and produce a second crop of flowers in July and August, as the *Iberis nudicaulis*. The whole herb is glaucous, somewhat succulent, bitter and pungent in taste and smell, yet horses and cows seem to feed it down. The petals are white, slightly notched, about the length of the calyx, sometimes a little shorter or longer. Antheræ and calyx purplish. Seeds three or four in each cell.

Great confusion, originating with Mr. Hudson, has arisen about the English species of *Thlaspi*. This plant is certainly his *montanum*, though the *alpestre* of Linnæus, as appears from the Herbarium and description of the last mentioned author. The Linnæan *montanum* differs from ours in having much larger petals, leaves more entire, a creeping root, and only one or at most two seeds in each side of the pod. Its antheræ too are yellow. We believe it to be a stranger to our island. *Thlaspi alpestre* of Hudson is really the *perfoliatum* of Linnæus, as it stood in the 1st edition of *Flora Anglica*, and is an annual branched plant, with dentated leaves and small flowers. Those who like to guess at hybrid plants might suppose our *alpestre* to be produced between *perfoliatum* and *montanum* ; but we would not hazard any such supposition, believing them three naturally very distinct species, only having several characters in common. The great fruitfulness of this species is a pretty positive proof against its being a hybrid.

It is necessary to remark that Dr. Withering, having taken up these plants from Mr. Hudson, has much confused their history by misapplying the accounts given of each in different authors.



PARNASSIA palustris.

*Grass of Parnassus.**PENTANDRIA Tetragynia.*

GEN. CHAR. *Calyx* five-cleft. *Petals* five. *Nectaries* five, heart-shaped, fringed with bristles terminated by little balls. *Capsule* with four valves.

SPEC. CHAR. . . .

SYN. *Parnassia palustris*. *Linn. Sp. Pl.* 391. *Huds. Fl. An.* 131. *With. Bot. Arr.* 325. *Relb. Cant.* 129.

P. vulgaris et palustris. *Raii Syn.* 355.

PERHAPS the nectary of the *Parnassia palustris* is more elaborate in structure than that of any other British vegetable. We regret that its physiology is unknown. What share those capillary protuberances, tipped with pellucid globes, have in the formation of honey, is very doubtful, though that fluid is found about the lower part of the organ which supports them. These parts however form an excellent generic character, and there is but one species of the genus. Theoretical botanists are not agreed about its affinities, except that it is allied to *Drosera*, and we think also to *Dionæa* and *Saxifraga*, though Mr. De Jussieu separates them all widely; but he seems not decided in his opinion. The *Parnassia* agrees with *Saxifraga* in the wonderful œconomy of its impregnation, which is performed by one of the stamina at a time coming over the stigma, and retiring again as soon as it has shed its pollen. Its place is then supplied by another, till all have presented themselves in turn, and then the stigma closes. Sometimes two come together, or nearly so. Rue exhibits the same phenomenon.

This plant is common on bogs in the northern counties as well as in Norfolk, and produces its elegant milk-white flowers in August and September. The petals are curiously veined with pellucid lines; they preserve their whiteness when dried. The stem is angular and twisted; root perennial.



Ranunculus repens L. 1712

MYRIOPHYLLUM spicatum.

*Spiked Water-Millfoil.**MONOECIA Polyandria.*

GEN. CHAR. Male. *Cal.* four-leaved. *Petals* four. *Stamina* eight. Female. *Cal.* four-leaved. *Petals* four. *Pistilla* four. *Style* none. *Seeds* four, naked.

SPEC. CHAR. Male flowers in interrupted naked spikes.

SYN. *Myriophyllum spicatum.* Linn. *Sp. Pl.* 1409. *Hudf. Fl. An.* 419. *With. Bot. Arr.* 1077. *Relb. Cant.* 361.

Potamogeton foliis pennatis. Raii *Syn.* 150.

NOT uncommon in ditches and stagnant pools, flowering in July and August, when its numerous red spikes, standing erect above the surface, render it very conspicuous. This specimen came from the peninsula called the Isle of Dogs, facing Greenwich Hospital.

The roots are said to be perennial; they are long and slender. The stems are also very slender in their lower part, round and much branched upwards. Leaves in fours, spreading, very finely pectinated, always immersed in the water. The flowers only rise above the water, that their pollen may not be destroyed by it. Notwithstanding Vaillant in the year 1719 described this genus as having a corolla, Linnæus always persisted in denying its existence; and our own writers have copied him without any alteration. Yet it is certain we have found four very evident red petals, equal to the stamina and pistillum, and more than twice as long as the calyx. It is no less true that even the specimens of *M. verticillatum*, though not those of *M. spicatum* in the Linnæan Herbarium, have petals, at least in the male flowers. To account for this contrariety of description, we must suppose that the corolla of these plants is either very caducous, or frequently wanting, an accident well known to happen in many other vegetables. In our plant the calyx is acute and finely ciliated; the petals obtuse, concave and entire.



SAGITTARIA sagittifolia.

Common Arrow-head.

MONOECIA Polyandria.

GEN. CHAR. Male. *Cal.* three-leaved. *Petals* three. *Stamina* nearly twenty-four. Female. *Cal.* three-leaved. *Petals* three. *Pistilla* many. *Seeds* many, naked.

SPEC. CHAR. Leaves arrow-shaped, acute.

SYN. *Sagittaria sagittifolia.* *Linn. Sp. Pl.* 1410. *Huds. Fl. An.* 420. *With. Bot. Arr.* 1079. *Relb. Cant.* 362. *Sagitta. Raii Syn.* 258.

ONE of the most beautiful ornaments of our rivers, pools, and ditches throughout England is the Arrow-head. Its flowers are short lived, the petals soon falling off; but there is a succession of them through the months of July and August.

The root is perennial, consisting of a solid bulb or rather *tuber*, deeply fixed in the mud. Stems and footstalks triangular, very spongy, by which they are supported in the water in consequence of the air generated within them; they discharge a white milky juice, an uncommon circumstance in aquatic plants. The female flowers are few in number, and compose one or two of the lowermost whorls on the flowering branch, the rest being male. We have indeed observed three or four pistilla in some of these male flowers; but whether they ever ripen is uncertain.

Those leaves which grow under water are linear, and the plant varies much in size; hence many varieties, and pretended species of old authors. See Dr. Stokes's accurate description in the *Bot. Arr.* above quoted.



CUCUBALUS Otites.

Spanish Campion.

DECANDRIA Trigynia.

GEN. CHAR. *Cal.* swelling. *Petals* five, furnished with claws, not crowned at the mouth. *Capf.* three-celled.

SPEC. CHAR. Flowers dioicous. Petals linear, undivided.

SYN. Cucubalus Otites. *Linn. Sp. Pl.* 594. *Huds. Fl. An.* 186. *Willd. Bot. Arr.* 446. *Rehb. Cant.* 168. *Lychnis viscaria flore muscosa. Raii Syn.* 340.

THIS plant, the least ostentatious of all its tribe, is peculiar to dry, sandy, and gravelly soils in a very few parts of England, chiefly Norfolk, Suffolk, and Cambridgeshire. The flowers appear in July and August; and although very numerous, may, from their green colour, be easily overlooked among the panicles of surrounding grasses. Our present specimen was sent from Bury by Wm. Matthew, Esq. called by mistake the Rev. Mr. Matthew in description of plates 63 and 65.

The root is perennial and strong, running deep into the ground, and producing many thick tufts of narrow, spatulate, entire, sharp-pointed leaves, which are viscid, and rough with minute, thick-set, curved and sometimes stellated, hairs, as are likewise the stem and flowerstalks. The stem is from one to two feet high, erect, viscid in the upper part, and producing numerous little opposite tufts of pedunculated flowers, intermixed with membranous bractæ. The flowers are male on one root, and female on another; but the former often produce abortive pistilla (as in our figure), and the latter abortive stamina. We suspect the number of styles varies from two to five. We have found in both sexes the same narrow entire yellowish petals, though they are said to be sometimes wanting; they are very much like those of *Saponaria lutea* *Linn.* (*Smith Spicil. t. 5.*) to which this plant is allied in habit; but the capsule of that has only one cell. Fig. 1 and 2 represent the pistilla of the female flowers; the others belong to the male.



S I L E N E *quinquevulnera*.*Variegated Catchfly.**DECANDRIA Trigynia.*

GEN. CHAR. *Cal.* swelling. *Petals* five, furnished with claws, and with a crown at the mouth. *Capf.* three-celled.

SPEC. CHAR. Flowers solitary, lateral, alternate; limb of the petals roundish and entire. Fruit erect.

SYN. *Silene quinquevulnera*. *Linn. Sp. Pl.* 595. *Huds. Fl. An.* 188. *With. Bot. Arr.* 449.

MR. Hudson is our authority for considering this pretty plant as of British growth, having mentioned it in his 2d edition of *Flora Anglica* as a native of sandy fields about Wrotham in Kent. It is commonly cultivated in flower-gardens, and may frequently be found almost naturalized on heaps of rubbish and other such places.

From a small fibrous annual root arise several flaccid spreading stems, round, hairy, and a little viscid, as are also the leaves, though very slightly so. Numerous flowers spring in an alternate order from the bosoms of the upper leaves, erect, or but little divaricated, even when the fruit is ripe. The petals are remarkable for the deep red spot in their centre like a drop of blood, as if the flower had received five wounds, whence the name *quinquevulnera*.

It continues in flower from June till the end of August, and produces great plenty of seeds.

Silene anglica is sometimes found with pale reddish spots on its petals; but its specific character, greater degree of viscosity, and paler colour of all its parts, distinguish it from this species.



Antennaria dioica L.

A S T E R Tripolium.

*Sea Star-wort.*SYNGENESIA *Polygamia Superflua.*

GEN. CHAR. *Receptacle* naked. *Seed-down* simple. *Cor.* with more than ten rays. *Cal.* imbricated, its lowermost scales spreading.

SPEC. CHAR. Leaves linear-lanceolate, entire, fleshy, smooth, obscurely three-nerved. Scales of the calyx somewhat membranous and obtuse. Flowers corymbose.

SYN. After Tripolium. *Linn. Sp. Pl.* 1226. *Huds. Fl. An.* 368. *Ait. Hort. Kew. V.* 3. 199. *With. Bot. Arr.* 915. *Relb. Cant.* 318.

A. maritimus cæruleus, Tripolium dictus. *Raii Syn.* 175.

A NATIVE of muddy sea-shores and mouths of rivers in every part of our coast, gathered on Woldham marsh by Lord Viscount Lewisham Aug. 29.

Root perennial, with long fibres. Stems from six inches to three feet high, leafy, branched, and producing abundance of flowers, which are not unornamental. Sometimes these flowers are perfectly destitute of rays, as found at Purfleet by Mr. T. F. Forster, junior, and at Lynn by Dr. Smith.—See the annexed specimen. The rays, when present, as is commonly the case, are generally of a delicate pale purple; sometimes they are white.

Dr. Stokes has observed this plant in *inland* salt-marshes, and therefore supposes, with great probability, its presence may be an indication of salt springs.



POTENTILLA fruticosa.

Shrubby Cinquefoil.

ICOSANDRIA Polygynia.

GEN. CHAR. *Calyx* in ten segments. *Petals* five. *Seeds* roundish, naked, affixed to a small dry receptacle.

SPEC. CHAR. Leaves pinnated. Stem shrubby.

SYN. *Potentilla fruticosa*. *Linn. Sp. Pl.* 709. *Huds. Fl. An.* 222. *With. Bot. Arr.* 531.

Pentaphylloides fruticosa. *Raii Syn.* 256.

SINGULAR in its genus for having a shrubby stem, three or four feet high, much branched, clothed with a brown bark, which cracks longitudinally, and falls off in scaly portions. The leaves cover the branches, and are alternate, pinnated, consisting of five, rarely seven, oblong entire leaflets, the uppermost pair of which are decurrent, but they never run upwards into the terminal one. Silvery hairs appear on several parts of the plant, especially along the edge and nerve of the back of the leaves, more slightly over their upper surface, and on the footstalks and flowerstalks. The flowers are bright yellow, solitary at the end of each branch, very ornamental; the five external leaves of the calyx oval, and remarkably large.

This plant, cultivated in almost every shrubbery for its beauty, being covered with flowers throughout the summer, grows wild abundantly in the romantic neighbourhood of the river Tees in the north of Yorkshire, where it was found in Ray's time, and from whence this specimen was sent by Mr. Robson of Darlington on the 14th of June last.



POTENTILLA argentea.

*Hoary Cinquefoil.**ICOSANDRIA Polygynia.*

GEN. CHAR. *Calyx* in ten segments. *Petals* five. *Seeds* roundish, naked, affixed to a small dry receptacle.

SPEC. CHAR. Leaflets five, wedge-shaped, jagged, downy beneath. Stem nearly erect.

SYN. *Potentilla argentea*. *Linn. Sp. Pl.* 712. *Huds. Fl. An.* 223. *With. Bot. Arr.* 532. *Relb. Cant.* 197.

Pentaphyllum erectum, foliis profunde sectis, subtus argenteis, flore luteo. *Raii Syn.* 255.

THIS species, though reckoned by Ray among our rarer plants, is found in many parts of England in a gravelly soil, and is said to indicate clay under the surface (Rose's Botany, 382).

Its perennial root throws out many woody, round, half erect stems, a foot or more in height, and producing alternate leaves, whose upper sides are green, the lower covered with snow-white cottony down, as are the calyx and upper part of the stem, which last is dichotomous, and assumes the form of a corymbus. The small bright yellow flowers appear in succession from June to autumn. No other British *Potentilla* can be confounded with this. Its form and habit much resemble the *Tormentilla*, except in being far more woody. The pure whiteness of its leaves, like that of the white poplar, renders this plant conspicuous whenever it is disturbed by wind or any other accident, and distinguishes it sufficiently from all of the same tribe.



CAMPANULA glomerata.

Clustered Bell-flower.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* bell-shaped, closed at the bottom by valves bearing the stamina. *Stigma* three-cleft. *Capsule* inferior, opening by lateral pores.

SPEC. CHAR. Stem angular, simple. Flowers sessile, most of them in a terminal cluster. Leaves ovate.

SYN. *Campanula glomerata.* Linn. *Sp. Pl.* 235. *Huds. Fl. An.* 96. *With. Bot. Arr.* 219. *Relb. Cant.* 94.

C. pratensis, flore conglomerato. *Raii Syn.* 277.

A NATIVE of dry chalky pastures, as Gogmagog hills, Newmarket heath, the neighbourhood of Marham in Norfolk, Bury in Suffolk, and various parts of Yorkshire, Surrey, and other chalk countries, which its conspicuous flowers adorn very copiously in the months of July and August.

The stem is never (we believe) branched, unless it happens to have been eaten off by cattle when young; it is erect, angular, hairy, from six to eighteen inches high. Leaves rough, pale but not hoary, beneath; the calyx, and even corolla, are sometimes hairy, and the latter occasionally varies from purple to white. Root perennial, with long fibres.

This plant is no contemptible ornament for rock-work, or flower-borders in dry ground, where little else will grow. A moist or rich soil makes the herb too luxuriant, the flowers pale and degenerate, taking away its alpine habit.



T A M U S communis.

Black Bryony.

D I O E C I A Hexandria.

GEN. CHAR. Male. *Calyx* in six segments. *Cor.* none.
 Female. *Cal.* in six segments. *Cor.* none. *Style*
 three-cleft. *Berry* inferior, three-celled. *Seeds* two
 in each cell.

SPEC. CHAR. Leaves heart-shaped, undivided.

SYN. *Tamus communis.* *Linn. Sp. Pl.* 1458. *Huds.*
Fl. An. 433. *With. Bot. Arr.* 1119. *Relb.*
Cant. 370.

Tamnus racemosa, flore minore luteo-pallescente.
Raii Syn. 262.

COMMON in shady thickets, hedges, and woods in most parts of England, but not in Scotland, nor the more northern countries of Europe, though on the contrary it is found as far south as Algiers and the Levant.

The root is blackish externally, whence its ancient denomination *Bryonia nigra*, and the English name. The stems twine about every thing in their way, and so ascend without tendrils to the tops of the more lofty bushes, which their festoons of tawny leaves and red berries decorate agreeably in autumn. Its flowers appear in June, the barren and fertile ones on separate roots, which Mr. Goodyer, an observing and accurate friend of Gerard's, seems first to have noted. See *Ger. emac.* 871. The berries are insipid, root acrid, and its pulp scraped has been formerly used as a stimulating plaister.



STELLARIA nemorum.

Wood Stitchwort.

DECANDRIA Trigynia.

GEN. CHAR. *Cal.* five-leaved, spreading. *Petals* five, cloven. *Capsule* one-celled, with many seeds.

SPEC. CHAR. Lower leaves, heart-shaped, on footstalks; upper ones ovate, sessile. Panicle dichotomous.

SYN. *Stellaria nemorum.* *Linn. Sp. Pl.* 603. *Huds. Fl. An.* 190. *With. Bot. Arr.* 455.

Alfina montana, folio *Smilacis* instar, flore laciniato.
Raii Syn. 347.

CONFINED to moist woods and the borders of clear shaded springs in the most northern parts of England, as well as in the low-lands of Scotland, flowering in May. Mr. Robson, to whom we are indebted for so many rare plants figured in this work, gathered the present specimen in Cliff-wood near Darlington.

Root perennial, small and creeping. Stems several, weak and lax, round, hollow, scattered here and there with hairs, chiefly in the upper part. Leaves pale green, tender and succulent. The numerous star-like flowers are visible at a distance, and of a delicate structure when closely examined.

For the consolation of fallible botanists we must remark that Linnæus in his *Flora Lapponica* (No. 186) confounds this plant with *Alfina media* and *Cerastium aquaticum*. The former may always be known, in all its numerous varieties, from this and every other plant of its natural order, by the hairy line on one side of its stem, first pointed out, if we remember right, by Mr. Curtis. The latter is distinguished from our *Stellaria* by being viscid, and much more hairy; its flowers much less conspicuous; calyx more oval, and less membranous; panicle more leafy; and especially by all the stem-leaves being sessile, neither are they lengthened out into so long a point; not to mention its five styles, which are very constant.

Stellaria nemorum thrives very well in Chelsea garden.



CERASTIUM arvense.

*Field Chickweed.**DECANDRIA Pentagynia.*

GEN. CHAR. *Cal.* five-leaved. *Petals* cloven. *Capful* one-celled, bursting at the top.

SPEC. CHAR. Leaves linear-lanceolate, obtuse, ciliated at the base. Corolla longer than the calyx.

SYN. *Cerastium arvense*. *Linn. Sp. Pl.* 628. *Huds. Fl. An.* 201. *With. Bot. Arr.* 478. *Relb. Cant.* 179.

Caryophyllus arvensis hirsutus, flore majore. *Raii Syn.* 348.

FREQUENTLY found in a gravelly soil in many parts of England, more rarely in Scotland, on dry banks and waste ground.

The root is perennial and creeping. Stems very numerous, procumbent at the base, and forming thick tufts, rising to about four or five inches in height, alternately branched, round, leafy, each terminated by two or three large, white, not inelegant flowers, with heart-shaped veined petals. The whole plant is often very hairy, always more or less so, even in Linnaeus's own Scanian specimens, though he describes the leaves as smooth. The germen is globular; capsule cylindrical, slender, shorter than the calyx, splitting into five narrow valves, pellucid and almost membranous.—It produces a profusion of flowers from May to September.



SATYRIUM viride.

*Frog Satyrion, or Orchis.**GYNANDRIA Diandria.*

GEN. CHAR. *Nectary* an inflated roundish bag behind the flower.

SPEC. CHAR. Bulbs palmated. Leaves oblong, obtuse. Lip linear, three-cleft, the middle segment smallest.

SYN. *Satyrium viride*. *Linn. Sp. Pl.* 1337. *Huds. Fl. An.* 386. *Willd. Bot. Arr.* 981. *Relb. Cant.* 335.

Orchis palmata minor flore luteo-viridi. *Raii Syn.* 381.

IN meadows and pastures, especially in a gravelly or rocky soil, in most parts of England, flowering about May, June or July, but growing dispersed, so as to be rarely found in any quantity together. We were favoured with this specimen from near Luton Hoo, Bedfordshire, by Mr. Sibley, a gentleman who has paid much attention to the *Orchis* tribe.

Dr. Stokes has given an excellent and full description of this plant in the *Bot. Arr.* to which we have nothing to add, nor can the species be confounded with any other. The colour of the lip varying from yellowish green to brown, and its middle segment varying likewise in size, a common accident in this tribe, gave occasion to Mr. Hudson to describe a *Satyrium fuscum*, *Fl. An. ed.* 1. but on no sufficient grounds, as the brown colour and the equally divided lip by no means constantly accompany each other, witness our figure.





HYOSERIS minima.

*Swine's Succory.**SYNGENESIA Polygamia Æqualis.*

GEN. CHAR. *Receptacle* naked. *Calyx* nearly equal.
Down simple, or imperceptible.

SPEC. CHAR. Stem divided, destitute of leaves.
 Flower-stalks swelled upwards.

SYN. *Hyoseris minima*. *Linn. Sp. Pl.* 1138. *Huds. Fl. An.* 346. *With. Bot. Arr.* 857. *Relb. Cant.* 300.

Hieracium minimum Clusii, *Hyoseris Tabernæmontani* & Gerardi. *Raii Syn.* 173.

IN barren sandy gravelly fields, but not common. Sent June 30th last from near Apsley and Ampthill, Bedfordshire, by the Rev. Mr. Abbott; also from Walthamstow, by Mr. E. Forster, junior. It was long ago found by the side of Arminghall wood near Norwich.

Root annual, but little branched. Leaves spreading on the ground, entire or irregularly toothed, rough, especially on their edges. Stems three, four, or more, round, smooth, taper and purplish at the bottom, swelling gradually upwards, alternately branched, striated, immediately under the flowers hollow and inflated, with here and there a few small scattered, pointed, erect bractæ. The flowers are solitary at the end of each subdivision of the stem, small, erect, bright yellow. Corollæ very obtuse and toothed. Seeds crowned with an elevated rim, more rarely with short simple down.

Like all field plants it varies extremely as to luxuriance, in its most abject state producing one simple solitary stalk with a single flower, while in a more favourable soil it sometimes bears six or more branched stems, many flowers, and leaves proportionably numerous and large. *Hypochaeris glabra* is remarkable for the same phenomenon.



HEDYSARUM Onobrychis.

Saint-Foin.

DIADELPHIA Decandria.

GEN. CHAR. *Keel* of the *Corolla* transversely obtuse.
Pod jointed, with one seed in each joint.

SPEC. CHAR. Leaves pinnated. *Pod* single-seeded,
prickly. Wings of the corolla equal to the calyx.
Stem elongated.

SYN. *Hedysarum Onobrychis.* *Linn. Sp. Pl.* 1059.
Huds. Fl. An. 322. *With. Bot. Arr.* 785. *Relb.*
Cant. 277. *Martyn. Fl. Rust. tab.* 47.

Onobrychis feu Caput gallinaceum. *Raii Syn.* 327.

A NATIVE of chalky pastures and open downs in various parts of England, always in dry barren situations, which its flowers greatly enliven about June and July.

The plant is readily distinguished from all others of British growth; and if any doubt could remain, the ample and exact descriptions of Dr. Withering and Mr. Woodward must entirely remove it.

This is a valuable plant for cultivation in dry barren soils for feeding cattle, as it grows luxuriantly where grass or corn would yield but a small produce. Professor Martyn mentions in his valuable *Flora Rustica* above quoted, that its cultivation began with us about the middle of last century, and though a native plant, its seeds were then procured from France and Flanders.



ISATIS tinctoria.

Woad.

TETRADYNAMIA Siliculosa.

GEN. CHAR. *Pouch* lanceolate, one-celled, single-seeded, deciduous, with two boat-like valves.

SPEC. CHAR. Radical leaves crenated, stem leaves arrow-shaped. *Pouch* oblong.

SYN. *Isatis tinctoria.* Linn. *Sp. Pl.* 936. *Huds. Fl. An.* 299. *With. Bot. Arr.* 717. *Relb. Cant.* 259.

Glastrum fativum. *Raii Syn.* 307.

NOT a native of our island originally; at least being according to Linnæus a maritime plant, and yet always found with us in and about cultivated fields, it should seem to have become naturalised from its frequent culture for the purpose of dying blue. Yet we are told by Pliny the ancient Britons painted their bodies with it. If Pliny's plant be ours, which is very probable, it must be a native.

The root is biennial. Stem erect, branched, round, set with alternate somewhat succulent leaves. The radical leaves only stand on long footstalks, and are crenated. Not only the corolla, but the calyx is yellow. The seed vessels dark brown. A few hairs are sometimes found on the stem and leaves. The flowers appear in July.

Although no admirers of whimsical innovation, especially in an artificial system, we cannot but think judicious corrections strengthen any system, and certainly lead to truth. We therefore adopt Professor Schreber's alteration of Linnæus in placing this genus, with *Bunias* and *Crambe*, in the order *Siliculosa*, to which they so evidently belong one is quite at a loss to conceive on what principle they could be placed among *Siliquosa*. Even Linnæus in his specific characters of these plants uses the term *siliculis*, and most systematic authors have placed them near *Draba*, *Lepidium*, &c.



S A N I C U L A europæa.

Wood Sanicle.

P E N T A N D R I A Digynia.

GEN. CHAR. *Umbels* clustered in little heads. *Fruit* rough. Central *flowers* abortive.

SPEC. CHAR. Radical leaves simple. Flowers all sessile.

SYN. *Sanicula europæa.* *Linn. Sp. Pl.* 339. *Huds. Fl.*

An. 110. *With. Bot. Arr.* 266. *Relb. Cant.* 108.

Sanicula five *Diapensia.* *Raii Syn.* 221.

COMMON enough in woods, growing among dead leaves of trees, and flowering with the first heralds of summer in May. Gerarde says "it joyeth in a fat and fruitfull moist soile." He also remarks that "it is used in potions which are called Vulnerarie potions, or wound drinckes, which make whole and found all inward wounds and outward hurts." Unhappily the experience of mankind since good Gerarde wrote has rather impaired the credit of such sovereign medicines. Ignorance is ever prone to confidence and wonder. The herb is bitter and pungently aromatic, but seems to partake of that virofe acrimony usual in umbelliferous plants which "joy in a fat and moist soile," and which is improved to a wholesome aromatic flavour in dry elevated situations.

The root is perennial, with long branched fleshy fibres. Leaves mostly radical, elegantly lobed and ciliated, deep green above, paler and more shining beneath. Stem twelve or eighteen inches high, but little branched, furrowed. Flowers often reddish. The central flowers of each little head or umbel have no styles, but in their place a glandular nectary (*Withering*). The petals are all nearly equal; they are wanting in the seed-bearing flowers, as Scopoli remarks.



B U P L E U R U M rotundifolium.

*Thorow-wax.**PENTANDRIA Digynia.*

GEN. CHAR. *Involucrum* longer than the umbels, five-leaved. *Petals* curled in. *Fruit* roundish, compressed, striated.

SPEC. CHAR. No general *involucrum*. Leaves perfoliate.

SYN. *Bupleurum rotundifolium*. *Linn. Sp. Pl.* 340. *Huds. Fl. An.* 111. *With. Bot. Arr.* 267. *Relb. Cant.* 108.

B. perfoliatum rotundifolium annuum. *Raii Syn.* 221.

A SOMEWHAT unfrequent annual in corn-fields, generally preferring a dry and chalky soil. Mr. Lewin communicated it from the neighbourhood of Dartford in Kent.

This herb like the Sanicle has the reputation of being a vulnerary, a quality which no medicine can have, any other-wise than as a tonic strengthening the constitution, nor can any external application be specifically healing or consolidating, nor be useful in any other way, than as a defence from the air.

The root is small and fibrous. Stem alternately branched, a little zigzag, clothed with singularly perfoliate leaves, which have occasioned the English name, from the old word *wax*, to grow. Both leaves and involucra are entire and sharp pointed. The flowers are yellowish and inconspicuous, coming out in June and July. Every part of the herb is remarkably hard and rigid, and has a slight aromatic smell.



RANUNCULUS *Lingua*.*Great Spear-wort.**POLYANDRIA Polygynia.*

GEN. CHAR. *Cal.* five-leaved. *Petals* five, with a honey-bearing pore on the inside of the claw of each. *Seeds* naked.

SPEC. CHAR. Leaves lanceolate. Stem erect.

SYN. *Ranunculus Lingua*. *Linn. Sp. Pl.* 773. *Huds. Fl. An.* 240. *With. Bot. Arr.* 572. *Relb. Cant.* 211.

R. flammeus major. Raii Syn. 250.

THIS has always been reckoned a very rare species of *Ranunculus*, yet it appears to belong to various parts of England. Mr. Robson sent this specimen from near Darlington. Dr. Smith has observed it in several parts of Norfolk. It generally grows in muddy ditches, flowering in July, and the root is perennial.

The species is very nearly allied to *R. Flammula*, and like that varies with entire or serrated leaves; but all its parts are vastly larger, its stem erect, its leaves more sharply pointed, and more sessile. The hairiness, which is but slight, is, as Linnaeus observes, short and close pressed to the leaves and stem: this last mark indeed does not distinguish it from *R. Flammula*. The flowers are of a bright golden colour, very conspicuous.

Linnaeus has called this species *Lingua*, because Dalechampius guessed it to be the *Lingua* of Pliny; but such conjectures are generally too ill founded to be depended on, and ignorance is preferable to vague and superficial information.

The herb is acrid like most of its tribe.



RANUNCULUS aquatilis.

*Water Crow-foot.**POLYANDRIA Polygynia.*

GEN. CHAR. *Cal.* five-leaved. *Petals* five, with a honey-bearing pore on the inside of the claw of each. *Seeds* naked.

SPEC. CHAR. Leaves capillary under water, above somewhat peltate.

SYN. *Ranunculus aquatilis.* *Linn. Sp. Pl.* 781. *Huds. Fl. An.* 243. *With. Bot. Arr.* 577. *Relb. Cant.* 216. *Raii Syn.* 249. n. 3, and n. 4, 5 and 6.

A VERY common but beautiful ornament of ponds and ditches, displaying its elegant white flowers above the surface of the water copiously in May, and more sparingly throughout June and July. The root is perennial, and throws up long round stems, clothed with alternate leaves, with broad membranous stipulæ at the base of their footstalks. These leaves exhibit a very curious phenomenon, such as grow under water being divided into fine capillary segments, while those that swim on the surface are merely five-lobed and grossly notched. Sometimes all the leaves are capillary, none of them emerging from the water, and in a strong stream their outline is found much lengthened out, apparently from the action of the current. Hence the several varieties mentioned by Ray and others. The footstalks of the floating leaves are often very long, probably stretched by supporting the plant. The nectary is tubular. The flowers vary a little in size occasionally.



S T A T I C E Limonium.

*Sea Lavender.**PENTANDRIA Pentagynia.*

GEN. CHAR. *Cal.* of one leaf, entire, plaited, filmy.
Petals five. *Seed* single.

SPEC. CHAR. Stalk panicled, round. Leaves smooth,
 destitute of nerves, tipped with a small point.

SYN. Statice Limonium. *Linn. Sp. Pl.* 394. *Huds.*
Fl. An. 132. *With. Bot. Arr.* 327.

Limonium. *Raii Syn.* 201.

GATHERED last August by Lord Viscount Lewisham on Woldham Marsh near Rochester. The plant loves a muddy soil in salt marshes, or on the shores of great rivers washed by the tide, and flowers late. Scarcely any vegetable is more various as to luxuriance, being sometimes found with leaves scarcely an inch long, and not more than six or eight flowers in the panicle, while at other times it is even much more large and its flowers more abundant than in the specimen before us. The bright blue colour distinguishes it at a distance, and that colour is tolerably permanent. Though less magnificent than some foreign species of its genus, this is a very beautiful plant. Its appearance scarcely enough resembles lavender to justify the English name, nor has it any aromatic quality. The root is strong and perennial.



FUMARIA claviculata.

Climbing Fumitory.

DIADELPHIA Hexandria.

GEN. CHAR. *Cal.* two-leaved. *Cor.* gaping. *Filaments* two, membranous, with three antheræ on each.

SPEC. CHAR. Pods linear. Leaf-stalks ending in a tendril.

SYN. *Fumaria claviculata.* *Linn. Sp. Pl.* 985. *Huds. Fl. An.* 309. *With. Bot. Arr.* 753.

F. alba latifolia. *Raii Syn.* 335.

THIS delicate plant is by no means frequent in England, though almost peculiar to our island.—It loves a sandy or gravelly soil in moist, shady, somewhat mountainous situations. This specimen was gathered from a hedge separating a wood and a meadow behind the Eagle Inn at Snarebrook, near Woodford, Essex, where I have known it these five years. *James Sowerby.*

The root is annual. Herb weak and succulent in all its parts, and so tender in habit that no good specimens can be obtained except they are instantly after gathering spread in a book, and so left till they are dry. The stem is flattened on one side. Leaves glaucous, paler beneath, pinnate, then pedate, the leaflets oval, sharp-pointed and entire; their common footstalk ending in an alternately compound tendril, which takes fast hold of the neighbouring plants; another obstacle to getting good specimens. The pale greenish white flowers appear in June, followed by more till the end of July. The pods, which are very different in different species of *Fumaria*, in this are linear, or rather oblong, pointed and smooth, containing generally three seeds.



ANTHYLLIS vulneraria.

*Kidney Vetch, or Ladies Finger.**DIADELPHIA Decandria.*

GEN. CHAR. *Cal.* inflated. *Pod* roundish, clothed with the calyx. *Stamina* all connected at their base.

SPEC. CHAR. Herbaceous. Leaves pinnated, unequal. Heads of flowers in pairs.

SYN. *Anthyllis vulneraria*. *Linn. Sp. Pl.* 1012. *Huds.*

Fl. An. 313. *With. Bot. Arr.* 765. *Relb. Cant.* 271.

Vulneraria rustica. *Raii Syn.* 325.

WE have in a late number presumed to animadvert on the fallacy of common report as to the vulnerary powers of vegetables, and here present a plant which has scarcely report to countenance its pretensions, nor any thing else than a name, for which we meet with no authority but the account of John Bauhin, who, from the nature of his vast work, was obliged to trust much to others. The plant however is highly worthy of consideration as a food for cattle, thriving like the Saint-foin in dry chalky places, and being favourable to the production of milk, as indeed its natural affinities would appear to indicate.

It occurs in most of our chalk and lime-stone countries abundantly, flowering from June to August. The root is perennial and woody. Stems round, hairy, nearly a foot high, not quite erect, leafy, terminated by two heads of thick-set yellow flowers, with fingered bractæ, and a membranous hairy calyx. One of these heads is lower than the other, and flowers earlier. The leaves are pinnated, approaching to a lyrate form; their leaflets very unequal in size, entire, of a fine green and nearly smooth above, hairy beneath and on their margin.

The flowers are sometimes found scarlet, which Linnæus attributes to a red clay soil; he also mentions their becoming white in a white clay, but the latter variety we have not observed.



GAL IUM boreale.

Cross-leaved Ladies Bedstraw.

TETRANDRIA Monogynia.

GEN. CHAR. Cor. of one petal, flat. Seeds two, roundish.

SPEC. CHAR. Leaves in fours, lanceolate, three-nerved, not hairy. Stem nearly erect. Seeds bristly.

SYN. Galium boreale. Linn. Sp. Pl. 156. Hudf. Fl. An. 70. With. Bot. Arr. 156.

Mollugo montana erecta quadrifolia. Raii Syn. 224.

THE Galium before us is one of the most easily determined, being distinguished from the common *Aparine* by having four leaves only at each joint, and from every other British species by its hairy or bristly fruit. It grows only in mountainous countries, in rocky shady places about rivers, very plentifully at Kirkby Lonsdale, and in other parts of Westmoreland, as well as in Scotland. Mr. Robson sent this specimen from the county of Durham.

The root is long and slender, running deep among the stones, tinged with red, which colour it communicates to woollen. Stems much branched, rough to the touch as well as the leaves, though not hairy. The leaves are pale beneath, blunt, and very accurately three-nerved. Copious panicles of milk-white flowers terminate the stem in July, at first sight appearing like those of Galium Mollugo, especially when growing among bushes. The hairs on the fruit are slightly curved upwards, and of a whitish colour.

G E U M rivale.

*Water Avens.**ICOSANDRIA Polygynia.*

GEN. CHAR. *Cal.* in ten segments. *Petals* five. *Seeds* with a jointed awn.

SPEC. CHAR. Flowers drooping. Fruit oblong; awns twisted and feathery.

SYN. *Geum rivale*. *Linn. Sp. Pl.* 717. *Huds. Fl. An.* 226. *With. Bot. Arr.* 538. *Relb. Cant.* 199.

Caryophyllata montana purpurea. *Raii Syn.* 253.

THIS most elegant plant has had the fortune to be reckoned much more rare than it really is. Most botanists mention it as a mountain production; but it occurs also in low lands not unfrequently, as in meadows between Norwich and Thorpe, Prior's Wood between Downham and Lynn, and other parts of Norfolk. It grows also in Canada, and Tournefort found it in the Levant. The flowers appear in June and July.

Root creeping, woody, reddish, astringent and very aromatic, with a clove-like smell, whence it has been found useful in intermittent fevers. Stem erect, round, bearing two or three small leaves, divided and elegantly drooping at the top, with two or three flowers; but as the fruit ripens it becomes erect. The leaves are lyrate, with a large lobed terminal leaflet, and two or three pair of small intermediate ones among the others. The petals are erect, and never expand. The rich combination of the dark-green wrinkled leaves, with the glowing red-brown of the stem and calyx, and singularly delicate colour of the petals, added to the graceful position of the flowers, render this one of the most picturesque of our native plants.

Cultivated in a dry barren soil it grows well, but the flowers become double and proliferous. Mr. Robson, to whom we are obliged for this specimen, mentions a variety with yellow flowers found in the woods of Yorkshire, which Dr. Smith also observed at Matlock, and guessed it might be a hybrid between *G. rivale* and *urbanum*. Its awns are hairy as in the former, its habit, colour, and size more resembling the latter.



Proctor & Co. May 1. 1793

CARDUUS lanceolatus.

*Spear Thistle.*SYNGENESIA *Polygamia Æqualis.*

GEN. CHAR. *Cal.* ovate, imbricated with spinous scales.
Receptacle hairy.

SPEC. CHAR. Leaves decurrent, pinnatifid, hispid; their
 segments divaricated. Calyx villose. Stem hairy.

SYN. *Carduus lanceolatus.* *Lim. Sp. Pl.* 1149. *Huds.*

Fl. An. 350. *With. Bot. Arr.* 868. *Relb. Cant.* 304.

C. lanceatus. *Raii Syn.* 195.

AMONG the various tribes of thistles, many of them very intricate to a botanist, this is one of the most easily distinguished, as well as the most common. All our road-sides, banks and heaps of rubbish are occupied by it, of which it seems proudly to take possession, to the exclusion of all vegetables besides. Yet, as Dr. Withering observes, it is often a shelter and protection to other plants, and is one of the first to grow in places where many would not thrive. In other respects its use in the œconomy of nature is not very discernible, except that the seeds are eaten by small birds, particularly the Gold-finch.

Root biennial. Stem erect, three or four feet high, firm, branched, striated, slightly hairy, and covered like the back of the leaves and calyx with a cotton-like web. The leaves, white beneath, are green and very hispid on the upper side, decurrent at the base, and all their indentations are armed with strong divaricating spines. It begins flowering in June, and lasts till winter.



OPHIOGLOSSUM vulgatum.

*Adder's Tongue.**CRYPTOGAMIA Filices.*

GEN. CHAR. *Capsules* numerous, connected in a two-ranked spike by an enveloping membrane, roundish, bursting transversely, destitute of a ring. *Seeds* many, very minute.

SPEC. CHAR. Leaf ovate, without veins, bearing the spike.

SYN. *Ophioglossum vulgatum.* *Linn. Sp. Pl.* 1518.
Huds. Fl. An. 449. *With. Bot. Arr. V.* 3. 45. *Relb. Cant.* 386.

Ophioglossum. *Raii Syn.* 128.

HERE we have another vulnerary, which Ray says "is excellent, either taken internally or applied outwardly;" and that "an infusion of its leaves in olive oil is famous for curing wounds and ulcers. The powder is good for ruptures." Gerarde remarks, that the above oil is of so beautiful a green, many have supposed it made of verdegris. It is at present out of use, though astringent and tonic; the shops abounding with much better medicines of that description.

This singular vegetable is by no means very uncommon in boggy meadows, and is to be found in perfection about May, or not later than June. Mr. B. M. Forster favoured us with this specimen from a field at Walthamstow. The whole herb is succulent and very smooth. Roots of a few simple fibres like those of the Orchis tribe, from whose point of union arises a simple stem, with one or more buds for the next year. The spike, generally simple, is very rarely found cloven more or less deeply. When ripe it splits transversely on each side into numerous little portions, from whose interstices the seeds are discharged, the capsular valves being imbedded in the portions of the spike.

The genus has little connexion with ferns, except through the medium of the true Osmundas—see Dr. Stokes's excellent remarks in the third volume of Bot. Arr. p. 46, &c. The Linnaean term *frons* cannot without violence be used in the genus of *Ophioglossum*, as there is no necessary connexion between the leaf and fructification, one species, *O. nudicaule*, if not more, having them on distinct stalks.



Sp. Pl. 1, 100, 101, 102, 103

HYPERICUM elodes.

*Marsh St. John's Wort.**POLYADELPHIA Polyandria.*

GEN. CHAR. *Cal.* five-cleft. *Petals* five. *Filaments* numerous, united at the base into three or five sets. *Capsule* roundish.

SPEC. CHAR. *Styles* three. *Stem* round, creeping, vil-
lous as well as the leaves, which are roundish.

SYN. *Hypericum elodes.* *Linn. Sp. Pl.* 1106. *Hudf. Fl.*
An. 334. *With. Bot. Arr.* 815. *Relb. Cant.* 289.

Afcyron fupinum villosum palustre. *Raii Syn.* 344.

SPONGY bogs in several parts of England produce this pretty species, nor has it been observed in any other country, except the northern part of France (Dalibard Paris. 234). This specimen grew on Hayes common in Kent; Dr. Smith found the plant on Derfingham moor near Lynn, and Francis Borone in Cornwall.

The stem is round, and grows nearly prostrate among wet mosses and grass, throwing out long fibrous perennial roots from the first three or four joints; its substance is spongy; its upper part downy. Leaves opposite, covering the stem, almost orbicular, blunt, rarely emarginate, entire, with about seven nerves, clothed, especially on the back, with down, composed of fine short jointed hairs. The panicle, terminal at first, becomes lateral by the protrusion of the stem beyond it, and is dichotomous, rarely producing more than from five to ten flowers, which appear in July and August, seldom expanding except in bright sunshine. Calyx divided about half way, fringed with red glands, as are likewise the bractæ. Petals with greenish ribs. Stamina in three sets, divided about half way down into from three to five filaments. Styles three. Nectary of three little yellow glands at the base of the germen.

This, as Linnæus observes, is very nearly related to his *H. tomentosum*, which however differs from *elodes* in having oblong leaves, the veins of which spring from the mid-rib, and not from the base, a much larger and more compound panicle, calyx and stamina more deeply divided, the former bearing black or purple glands.



ORCHIS pyramidalis.

Pyramidal Orchis.

GYNANDRIA Diandria.

GEN. CHAR. *Nectary* a spur behind the flower.

SPEC. CHAR. Bulbs undivided. Lip of the nectary in three equal segments, entire, with two protuberances, the horn long. Petals ovato-lanceolate.

SYN. *Orchis pyramidalis*. *Linn. Sp. Pl.* 1332. *Huds. Fl. An.* 382. *With. Bot. Arr.* 969. *Relb. Cant.* 332.*O. purpurea spica congesta pyramidalis*. *Raii Syn.* 377. *tab.* 18.

GROWS in meadows and pastures in a calcareous soil, more especially on chalky downs, flowering later than most others of the *Orchis* tribe, seldom before July. The whole herb is, as Dr. Stokes remarks, of a silky glossiness, and of an unspotted palish green. Spike dense, the buds erect; but as they open, the lowermost first, the flowers stand out horizontally, giving the spike a pyramidal form, which it loses again when all the flowers are expanded. The essential character of this species consists in two protuberances in the front of its lip near the base. Our figure represents the plant as it occurs in meadows; in chalk-pits and dry barren places it is smaller, the buds of a more deep blood-colour, and the spike more dense. The flowers are rarely found white. When drawn up in woods or among bushes, every part is more slender, straggling, and pale than in the present specimen.



LEPIDIUM petræum.

*Mountain Pepper-wort.**TETRADYNAMIA Siliculosa.*

GEN. CHAR. *Pouch* notched, with many seeds: valves keeled, but not margined: partition contrary to the valves.

SPEC. CHAR. Leaves pinnated, entire. Petals not longer than the calyx, slightly notched.

SYN. *Lepidium petræum.* Linn. *Sp. Pl.* 899. *Huds. Fl. An.* 280. *With. Bot. Arr.* 670.

Nasturtium montanum annuum tenuissime divisum.

Raii Syn. 304.

WE are obliged for this rare little plant to John Adams, Esq. who gathered the specimen early in March 1793 on a limestone wall in a very warm situation about two miles from Pembroke. It is also still found, as in Ray's time, on St. Vincent's rocks near Bristol Hot-wells, as we are informed by Dr. John Ford.

Root biennial, taper and fibrous. Stem much and alternately branched, spreading. Leaves elegantly pinnated, or rather very deeply pinnatifid, with an odd lobe; their segments oval, or spatulate, more or less pointed, entire, smooth. Flowers in a corymbus, gradually lengthened out into a spike, very minute, erect. Calyx and corolla spreading, the leaves of the former ovate and concave; the petals somewhat obovate, but narrow, white, about the length of the calyx, or shorter, sometimes, but not always, slightly notched at the tip. Stamina six, of which, from the smallness of the flower, the inequality can scarcely be perceived, but the shortest stand remote from the others. Pouch exactly oval, flat, with the remains of the style in a minute notch at the tip, smooth: valves boat-like, with a sharp, but not dilated, keel. Seeds two in each cell, on slender footstalks.

This species has the proper pouch of a *Lepidium*. In some foreign ones that part so nearly approaches to the pouch of *Thlaspi* in figure, it is scarcely possible to define the limits of the two genera.



LATHYRUS Nissolia.

*Crimson Grass-vetch.**DIADELPHIA Decandria.*

GEN. CHAR. *Style* flattened, downy above, broader upwards. Two upper segments of the *calyx* shortest.

SPEC. CHAR. Flower-stalks single-flowered. Leaves simple. Stipulæ awl-shaped.

SYN. *Lathyrus Nissolia*. *Linn. Sp. Pl.* 1022. *Huds. Fl. An.* 315. *With. Bot. Arr.* 770. *Relb. Cant.* 271.

Catanance leguminosa quorundam. Raii Syn. 325.

FOUND by the Countess of Ossory in a wood near Ampt-hill park, and communicated by T. Vaux, Esq. of Bedford.

The young plant, before flowering, is so like a grass that even an experienced botanist might mistake it for such; and it certainly escapes notice frequently, as Ray observes, by that means, though we think he speaks of this species as more common than it really is, in the borders of fields, among bushes, &c.

Its simple grassy leaves distinguish this from other plants of the same tribe. They are accompanied by a pair of very minute, awl-shaped, spreading stipulæ at their base. Sometimes, Mr. Hudson says, two flowers are found on one footstalk. They are of a beautiful rich crimson, very elegant in appearance; the pods long, linear, nearly cylindrical, and smooth, with many seeds; the root annual. The flowers appear early in May.

Linnaeus, in this instance, as in many others, has preserved an old generic name, *Nissolia*, given by Tournefort, as a trivial name, retaining its original feminine termination. Such trivial names, being substantives, ought always to begin with a capital letter. Many persons, for want of understanding this, have accused Linnaeus of writing false concords. Another example of the same is *Lotus Corniculata*; some such word as *dictus* being always understood. We do not mean to commend such trivial names, expressive adjectives being undoubtedly better.



MELAMPYRUM pratense.

Common Yellow Cow-wheat.

DIDYNAMIA Angiospermia.

GEN. CHAR. *Calyx* four-cleft. Upper lip of the *Corolla* compressed, turned back at the margin. *Capsule* two-celled, oblique, bursting at one edge. *Seeds* two, gibbous.

SPEC. CHAR. Flowers lateral, leaning one way. Leaves in distant pairs. Corolla closed.

SYN. *Melampyrum pratense*. Linn. Sp. Pl. 843.
Lightf. Fl. Scot. 324. *With. Bot. Arr.* 639.

M. fylvaticum. *Huds. Fl. An.* 270.

M. fylvat. flore luteo, five satureja lutea fylvestris.
Raii Syn. * 286.

MANY people, with the late Mr. Hudson**, mistake this for the *M. fylvaticum*, apparently because it grows generally in groves and thickets; but the true *fylvaticum* is a native chiefly of alpine forests, and has much smaller flowers, the orifice of whose corolla is much more gaping.

Root branched, annual. Stem slender, divided into several opposite spreading branches, the largest uppermost, the terminal one first producing several pairs of flowers, accompanied towards the top by dentated purplish bractæ. Corolla pale at the base, deep yellow towards the tip, its upper lip fringed with dense hairs, the lower one straight, not bent downwards as in *M. fylvaticum*, as Dr. Stokes well observes. Palate with two deep yellow elevated plaits. The antheræ cohere together at their tips.

Linnaeus says, the best and yellowest butter is made where this plant abounds. All authors have copied him, and we do not scruple to do the same, in hopes that somebody will in time be induced to make experiments on the subject in England, where this plant is far from uncommon, flowering all Summer long.

** The celebrated author of the *Flora Anglica*, after repeated paralytic attacks, departed this life May 23, 1793. His memory requires no studied eulogium here, as every page of the present work is an index to his labours. May the writer of this leave no more errors behind him, as an author, or as a man!



L I C H E N fragilis.

*Brittle Lichen.**C R Y P T O G A M I A* Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded. *Hedwig in With. Vol. 3. p. 29, &c.*

SPEC. CHAR. Shrubby, solid, branched, compressed, whitish. Shields terminal, depressed, producing black powder intermixed with fibres.

SYN. *Lichen fragilis. Linn. Sp. Pl. 1621. Hudf. Fl. An. 558. With. Bot. Arr. V. 3. 215. Jacq. Misc. V. 2. 92. t. 9. f. 6. c. bad.**L. melanocarpus. Swartz. Prod. 147.**Lichenoides non tubulosum ramosissimum, fruticuli specie, cinereo-fuscum. Raii Syn. 65?**Coralloides alpinum, Corallinae minoris facie. Dill. Musc. 116. t. 17. f. 34.*

FOUND on rocks and heaths in mountainous places, scarcely ever producing its shields except in moist shady situations. It was found in that state at Tunbridge by Mr. T. F. Forster, junr. in 1791, and by Dr. Smith, the following year, on the north side of the high rocks on Cromford moor near Matlock. We believe few persons since Dillenius have seen these shields.

The most common appearance of the plant is a thick tuft of short, erect, bluntish branches (fig. 1.) spreading on the rocks like a crustaceous Lichen. The flowering stems are widely different, an inch or two in height, more or less compressed, and much branched; each division terminating in a single shield, which when ripe produces a footy powder intermixed with black fibres, and the margin of which is formed of the common covering of the stem irregularly lacerated, and often growing out into young branches, or tubercles tipped with black. Many of the lateral branches have often a jointed appearance (fig. 2.), and are sometimes tipped with black; but whether these or the small warts occasionally found on the flowering branches (fig. 3.) be the male fructifications of Hedwig, we have not seen enough to determine. The reddish colour sometimes assumed by this and other Lichens, seems to be owing to an alkaline substance, probably the urine of animals.

Our quotation of Ray is taken on the authority of Dillenius, but seems more applicable to *L. globiferus*. We should rather have guessed No. 13. of R. Syn. to be *L. fragilis*; but as that was inserted by Dillenius, he cannot surely have interchanged these two synonyms.



L I C H E N globiferus.

*Globe Lichen.*C R Y P T O G A M I A *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, solid, much branched, cylindrical, brownish, and polished. Shields terminal, globular, producing a ball of black conglutinated powder.

SYN. Lichen globiferus. *Linn. Mant.* 133.L. globosus. *Huds. Fl. An.* ed. 1. 460.L. fragilis β . *Huds. Fl. An.* ed. 2. 558. *With. Bot. Arr.* 215.Lichenoides non tubulosum, ramulis scutellis nigris terminatis. *Raii Syn.* 66? See L. fragilis (114).Coralloides cupressiforme, capitulis globosis. *Dill. Musc.* 117. t. 17. f. 35.**A** Native of mountainous rocky heaths, very abundant in Scotland, Wales, and on Cromford moor near Matlock.This species forms tufts by far less dense than those of *L. fragilis*, from which it is very distinct, though much resembling it; and the flowering stems are abundantly produced, rising but little above the others. Its whole surface is polished and shining, greyish when wet, brown when dry, the branches tipped with white. The stems and branches are cylindrical, not compressed; and the fructifications perfectly globular, not flattened, opening by a small irregular orifice. They are scarcely ever surmounted by lateral ramifications; and in the bottom of their cavity (which never expands) is a round mass of black powder, probably the seeds.

How far the powdery fructification and singular habit of this and the preceding might entitle them to be considered as a distinct genus from real Lichens, botanists are at present too little acquainted with the tribe to determine.



7th Sowerby del^d July 1st 1793

T I L L Æ A muscosa.

Mossy Tillæa.

T E T R A N D R I A Tetragynia.

GEN. CHAR. *Calyx* three or four-cleft. *Petals* three or four. *Capsules* three or four, with many seeds.

SPEC. CHAR. Stems procumbent. Flowers three-cleft.

SYN. *Tillæa muscosa.* Linn. *Sp. Pl.* 186. *Huds. Fl. An.* 132. *With. Bot. Arr.* 132. *Rose's Elem. (Appendix)* 448. *t. 2. f. 2.*

THE most dreary sands are not always unprofitable to a botanist, their loose and fluctuating surface being often arrested for a while, and destined to afford support to a tribe of plants whose constitution is fitted by the all-wise Creator to thrive best on the meagre nourishment they afford. Thus some of the vast African deserts are turned to account by means of Mesembryanthemums, Cotyledons, and other succulent vegetables, and we have here a production nearly allied to the latter, which flourishes on the driest sandy heaths, where few others would live, and at a season when Mosses and Lichens are dried up. Large tracts of the above description in Norfolk, as Drayton, Cawston and Moushold heaths, as well as Brandon heath in Suffolk, are enlivened by its red colour from the end of May to September. Mr. Rose says this plant was first determined by the Rev. Mr. Bryant in 1766. Sir Thomas Cullum has found it near Bury, from whence our specimen was sent by W. Mathew, Esq.

The root is small, and annual. Stems after a while procumbent, round, becoming quadrangular when dry. Leaves opposite and strictly perfoliate, very fleshy, obtuse, punctated, concave above, convex on the under side, soon turning red as well as the stem. The flowers are one or two together in the bosoms of the leaves, nearly sessile, and sometimes accompanied with a pair of smaller leaves, denominated *bractæa* by Mr. Rose. Calyx of three still smaller leaves, distinguishable by their sharp points. Petals 3, ovate, acute, pellucid, less than the calyx. Stamina and styles still shorter. Germens 3, ovate, each producing two seeds.

Although this plant is always triandrous, yet as the three remaining species of *Tillæa* have 4 stamina, we cannot (with Dr. Withering) accommodate the English student so far as to remove the genus from the fourth class, where Linnæus has placed it, to the third.



LITHOSPERMUM purpuro-cœruleum.

*Creeping Gromwell.**PENTANDRIA Monogynia.*

GEN. CHAR. *Corolla* funnel-shaped, pervious, and naked. *Calyx* in five divisions.

SPEC. CHAR. Seeds smooth. *Corolla* obtuse, much longer than the calyx. Leaves lanceolate. Barren stems creeping.

SYN. *Lithospermum purpuro-cœruleum*. *Linn. Sp. Pl.* 190. *Huds. Fl. An.* 79. *With. Bot. Arr.* 190.

L. majus Dodonæi, flore purpureo, femine *Anchusæ*. *Raii Syn.* 229.

MR. Latham of Dartford, the celebrated ornithologist, has favoured us with wild specimens of this uncommon species of *Lithospermum*, collected by himself in a chalky soil not far from Greenhithe in Kent. It has hitherto been found only in two or three spots in the west of England, being most abundant in the more temperate parts of Europe.

The long woody perennial root produces many round, hairy, leafy stems, most of which are procumbent, and throw out roots: the flowering ones only are perfectly erect, and about 12 or 18 inches high. Leaves numerous, alternate, lanceolate, acute, clothed with short close-pressed bristles, which on the upper side of the leaf often arise from minute white tubercles or warts, as in many of this natural order. The beautiful flowers appear in April or May, standing erect in a sort of double leafy spike, whose extremities are a little curved downwards before flowering. *Calyx* hairy, divided to the base into five very narrow linear obtuse segments. *Corolla* about twice as long (not several times longer), first purple, then blue, with a pale reddish tube; around its orifice are five blunt hairy swellings, which however do not close it. The stamina are somewhat shorter than the tube, and united with that part half way up. Style about as long, with a slightly-notched stigma. Germen and seeds very smooth; the latter are frequently abortive, as in most plants that increase much by their roots.



PULMONARIA officinalis.

Common Lungwort.

PENTANDRIA Monogynia.

GEN. CHAR. *Corolla* funnel-shaped, pervious. *Calyx* prismatic, five-sided.

SPEC. CHAR. *Calyx* nearly as long as the tube. Upper leaves ovate, acute, rough.

SYN. *Pulmonaria officinalis*. *Linn. Sp. Pl.* 194. *Huds. Fl. An.* 81. *With. Bot. Arr.* 193.

P. foliis Echii. *Raii Syn.* 226. *Ger. em.* 808.

HOWEVER common in every garden, the *Pulmonaria* is of very unfrequent occurrence with us in a wild state, inasmuch that authors are not agreed about the identity of our British species (see Withering). We have fortunately obtained, by the favour of Mr. E. Robson, a wild specimen from near Darlington, which being compared with the Linnean herbarium, decides the *P. officinalis*, at least, to be a British plant. Mr. Goodyer's plant from the New Forest is most probably the same. How far the real *P. angustifolia* (*Herb. Linn.*) may be specifically distinct, we dare not determine. The *P. maculosa*, *Ger. em.* 808. *f.* 1. should seem to be a broad-leaved variety of ours, from whence the specific character of Linnæus was taken, which we have ventured to alter that it may better accord with our specimens, and indeed with his own, which exhibit the usual appearance of the wild plant throughout Europe. In Italy nothing is more common in groves and thickets.

The root is perennial; stems simple, erect, near a foot high, angular, and rough. Lower leaves much lengthened out at the base, of a light green; the upper ones only, which are ovate, and rather broad, being speckled with white on the upper side. This however is a variable circumstance. The flowers appear in April or May. The plant loves shade. Every part is mucilaginous; but its reputation as a cure for coughs, arose not from that circumstance, but from its speckled appearance, resembling the lungs!

Much conformity is observable between the structure of this flower and that of *Lithospermum purpureo-cœruleum*, *t.* 117. Indeed the genera of many of the *Asperifoliae* are somewhat too nearly allied.



DAPHNE Laureola

Spurge Laurel.

OCTANDRIA Monogynia.

GEN. CHAR. *Calyx* four-cleft, resembling a corolla, withering but permanent, enclosing the stamina. *Berry* with one seed.

SPEC. CHAR. Clusters axillary, of about five flowers. Leaves lanceolate, smooth.

SYN. *Daphne Laureola.* Linn. *Sp. Pl.* 510. *Huds. Fl. An.* 167. *With. Bot. Arr.* 403. *Relb. Cant.* 157. *Laureola.* Raii *Syn.* 465.

THIS shrub, not unaptly resembling a palm-tree in miniature, often occurs in woods and hedges. Its evergreen leaves are conspicuous in Winter, and the flowers come forth early in March. In Summer the black berries remain for a considerable time.

Every part is remarkably smooth. The stem round, about three feet high, tough, but little branched, naked below, crowned at the summit with a tuft of leaves, among which grow bunches of green inconspicuous flowers, of an unpleasant smell, accompanied by several concave bractææ, which soon fall off. This plant, though highly acrid, may be taken internally, and is recommended in worm cases, but the dose is very small. See Dr. Withering.

Gardeners have lately learned to engraft upon this the *Daphne Cneorum*, by which that elegant and fragrant species is the more easily propagated.



Vanilla planifolia Willd. 1793.

RANUNCULUS parviflorus.

*Small-flowered Crow-foot.**POLYANDRIA Polygynia.*

GEN. CHAR. *Cal.* five-leaved. *Petals* five, with a honey-bearing pore on the inside of the claw of each. *Seeds* naked.

SPEC. CHAR. *Seeds* rough on the sides, with hooked tubercles. *Leaves* simple, hairy, jagged, their segments acute. *Stem* prostrate.

SYN. *Ranunculus parviflorus.* *Linn. Sp. Pl.* 780. *Huds. Fl. An.* 242. *With. Bot. Arr.* 577. *Relb. Cant.* 215.

R. hirsutus annuus flore minimo. *Raii Syn.* 248. *t.* 12. *f.* 1.

GATHERED about Lee-Bridge, near Walthamstow, by Mr. B. M. Forster, in May last. It is an annual of very humble growth, occurring sometimes in dry gravelly places, but not frequently; nor does it obtrude itself on the notice of the passenger by any showy blossoms, or elegance of form or colour.

The fibrous root throws out many prostrate spreading branched stems, which are round, hollow, leafy, and clothed like the leaves with long, spreading, soft hairs. The footstalks are rather long, and dilated at their base into a pair of membranous stipulæ; lower leaves slightly lobed, upper ones deeply so, and all crenate; but the trailing branches often produce, towards their extremities, simple lanceolate entire leaves. The flower-stalks stand solitary, opposite to the leaves, each bearing a very small yellow flower, whose petals are so minute and fugacious, possibly so imperfect, they can rarely be seen in their proper form and number. This species is characterized very clearly by its compressed seeds, whose sides are rough with thick-set tubercles, each of which ends in a hooked point. These seeds ripen in June and July.



1^{re} Ranunculus del. 7uly 1793.

GERANIUM sylvaticum.

*Wood Cranebill.**MONADELPHIA Decandria.*

GEN. CHAR. *Style* one. *Cor.* of five petals, regular.
Nectary five glands at the base of the longer stamina.
Fruit beaked, separating into five arilli, each tipped with a long simple naked awn.

SPEC. CHAR. Stalks two-flowered. Leaves with five or seven sharp lobes, deeply notched and serrated. Stem erect. Petals slightly notched.

SYN. *Geranium sylvaticum.* Linn. *Sp. Pl.* 954. *Huds. Fl. An.* 302. *With. Bot. Arr.* 727.

G. palustre ? *Rose's Elem. (App.)* 441. t. 1.

G. batrachoides montanum nostras. *Raii Syn.* 361.

COMMUNICATED from the county of Durham by Mr. E. Robson. However common about woods, thickets and pastures in the north of England, and in Scotland, this *Geranium* is very seldom met with in the southern counties. Mr. Rose, finding the Norfolk specimens not answer exactly to the Linnæan characters, erroneously imagined his plant to be the *palustre*, misled as it should seem by the luxuriance of his specimens, their reddish flower buds, which is a variable circumstance, and possibly by the petals being less deeply notched than Linnæus seems to describe them; but in that respect, too, this and other species occasionally vary. In his figure the petals are too round and entire.

In our specimens, which agree exactly with Mr. Rose's own herbarium in Dr. Smith's possession, and differ in no material respect from that of Linnæus, the root is strong and perennial; stems several, 2 or 3 feet high, roundish, angular when dried, covered with reflexed hairs, much branched, and terminated by numerous flowers. The leaves can scarcely be called *subpeltate*; they are hairy, with close-pressed hairs, pale beneath, and full of strong zigzag veins. The inner leaves of the calyx have a membranous border; petals blunt, scarcely notched, hairy at the base; stamina all nearly equal; arillus of the seed hairy, with a brown elevated keel, but not rugged. The flowers last through June and July.



T. Sowerby del. Aug. 11 1793

A L L I U M urfinum.

*Broad-leaved Garlick, or Ramsons.**HEXANDRIA Monogynia.*

GEN. CHAR. *Cor.* in 6 spreading segments. *Spatha* containing many flowers. *Umbel* dense. *Capsule* superior.

SPEC. CHAR. Stalk naked, triangular. Leaves lanceolate, on footstalks. Umbel flattish on the top.

SYN. *Allium urfinum.* *Linn. Sp. Pl.* 431. *Huds. Fl.*

An. 140. *With. Bot. Arr.* 344. *Relb. Cant.* 135.

A. fylvestre latifolium. *Raii Syn.* 370.

THIS plant is but too plentiful in woods and hedges throughout most parts of England. The milk of cows that eat it becomes intolerably nauseous, from the well-known garlick flavour common to the whole genus, and peculiarly active in this species. Its roots consist of long fleshy fibres at the bottom of a slender bulb, and can scarcely be eradicated when they have once taken possession of a spot of ground. Moist shady groves and thickets are its favourite habitation, and the copious snow-white flowers, enlivening many a shady dell, might be seen with pleasure, if the odour of the herb, wherever it is bruised or trodden upon, did not so frequently infect the air around.

This is one of those species of *Allium* whose leaves all arise from the root, and the only British one of that description with broad leaves. Its characters indeed cannot be mistaken. The stalk is occasionally more or less acutely triangular, at least in the upper part; spatha of two leaves; filaments all of equal breadth, and nearly equal in length. The flowers appear early in May, or in the more northern and mountainous counties somewhat later.

LITHOSPERMUM arvense.

Corn Gromwell.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* funnel-shaped, pervious and naked.
Cal. in five divisions.

SPEC. CHAR. Seeds rugged. Corolla obtuse, scarcely longer than the calyx.

SYN. *Lithospermum arvense.* *Linn. Sp. Pl.* 190. *Huds. Fl. An.* 79. *With. Bot. Arr.* 189. *Relb. Cant.* 76.

Buglossum arvense annuum, Lithospermi folio. Raii Syn. 227.

FREQUENT in corn-fields and waste places, flowering from May to July. The root is annual, small, and not much branched; its bark abounding with a deep red dye, which stains paper, linen, &c. of the same colour, and is easily communicated to oily substances. Hence the name of Bastard Alkanet, sometimes given to this plant. Linnæus, in *Flo. Suecica*, says, the country girls in the north of Sweden use the root to paint their faces, by which they should seem to be terribly deficient, either in healthy natural bloom, or in taste.

The stem is often very much branched, round, rough, clothed with alternate, lanceolate, entire, rough and rigid leaves, in the axillæ of the uppermost of which the flowers stand solitary, nearly sessile. The corolla is small and white, with five swellings around its orifice, exactly as in *L. purpuro-cæruleum*, t. 117. Very near the bottom of its tube stand the 5 very short and minute stamina, on a level with the style, which is about half as long as the tube. The seeds are brown, rugged, and produced in great abundance, so that the plant is often a very troublesome weed.



Dianthus barbatus L.

GNAPHALIUM rectum.

*Upright Cudweed.**STYNGENESIA Polygamia-superflua.*

GEN. CHAR. *Receptacle* naked. *Down* feathery. *Cal.* imbricated; its marginal scales rounded, membranous and coloured. *Florets* all equal and tubular.

SPEC. CHAR. Stem erect, terminating in a leafy compound spike. Leaves linear-lanceolate, almost naked on the upper side.

SYN. *Gnaphalium rectum.* *Baub. Hist. vol. 3. part 1, p. 160.*

Gn. sylvaticum. *Huds. Fl. An. 360. With. Bot. Arr. 895. Relb. Cant. 312. Lightf. Fl. Scot. 472. Retz. Fl. Scand. 156.*

Gn. anglicum. *Raii Syn. 180. Ger. em. 639.*

A NATIVE of groves, thickets and pastures in a light sandy soil in many places, sent from Bedfordshire by the Rev. Mr. Abbot. It flowers in the latter part of Summer, and is easily perceived. The root is perennial.

We cannot but agree with Prof. Retzius, who, in his *Flora Scandinavie Prodrromus*, has distinguished this from another species of *Gnaphalium*, with which Linnæus confounded it. The real *Gn. sylvaticum* of the last named author, intended by him in *Fl. Lapp. and Sp. Plant.* is the *Gn. norvegicum* of Retzius, and *Fl. Dan. 254*, as appears from original ancient specimens in the *Herb. Linn.* as well as from the specific character; though it also appears from the *Cliffortian Herbarium*, now in the possession of Sir J. Banks, and indeed from many of his synonyms throughout, that Linnæus confounded the two together, as many other botanists have done. As these species are unquestionably distinct, it becomes necessary to give ours another trivial name, and we have chosen that of John Bauhin for its aptness as well as its antiquity.

The real *sylvaticum* is a native of alpine woods, and is what Mr. Lightfoot speaks of as a variety (p. 472). We hope at some future period to give a figure of it; in the mean time *Fl. Dan. t. 254*, is a good representation, which Mr. Woodward and Dr. Stokes truly remarked (*With. 895.*) did not well suit our lowland plant. That which it describes differs from our *Gn. rectum* in having broader leaves, more attenuated however at the base, and less naked on the upper surface; and a short dense simple spike of flowers, with a blacker calyx.



J. Sowerby del. Aug. 1^o 1793.

CENTAUREA Calcitrapa.

*Star Thistle.*SYNGENESIA *Polygamia-frustranea.*

GEN. CHAR. *Receptacle* bristly. *Down* simple. *Cor.* of the radius funnel-shaped, irregular, longer than those of the disk.

SPEC. CHAR. Flowers sessile. Calyx with compound spines. Leaves pinnatifid, with narrow dentated segments. Stem hairy.

SYN. *Centaurea Calcitrapa.* *Linn. Sp. Pl.* 1297. *Huds. Fl. An.* 376. *With. Bot. Arr.* 946. *Relb. Cant.* 326. *Carduus stellatus.* *Raii Syn.* 196.

FOUND not unfrequently in a barren gravelly or sandy soil in waste ground, by road sides, and similar places, beginning to flower about Midsummer, and continuing in blossom till destroyed by cold, being rather tender, when it becomes bleached and blown about by the wind, dispersing its seeds as it goes.

From one annual root arises a low, much-branched, and bushy stem, strongly furrowed, clothed with slender soft hairs, and covered with abundance of pale-green leaves, sometimes alternate, sometimes from luxuriance clustered under the branches. These leaves are more or less deeply pinnatifid, their segments long, narrow, acute, and variously dentated; the uppermost are more simple, and scarcely divided at all. At each divarication of the stem is a sessile flower, its calyx composed of very strong, spinous, yellowish, polished scales, pinnated with lesser spines at the base of their terminal one. Corolla pale purple, the radiant florets not much larger than the fertile ones of the disk. The seeds have scarcely any feather or down, though the receptacle is hairy.

The stamina of this plant are said to be irritable, contracting when touched, and drawing their antheræ downward along the style, like those of the artichoke, but we have never been able to detect this curious property.



LICHEN physodes.

*Inflated Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, the segments obtuse, composed of a double membrane, and slightly inflated,

SYN. Lichen physodes. *Linn. Sp. Pl.* 1610. *Huds. Fl. An.* 533. *With. Bot. Arr. V.* 3. 187. *Relb. Cant.* 429.

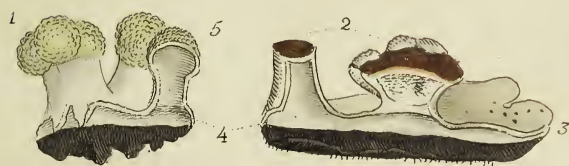
Lichenoides ceratophyllon obtusius et minus ramosum.

Raii Syn. 76. *Dill. Musc.* 154, t. 20. f. 49.

NOT uncommon on trunks of trees, old pales, large stones, and barren sandy moors, frequently growing slightly attached to the stems of heath, and very conspicuous from its bleached white colour, and its elegantly divided and curled form, but the shields are very rarely indeed to be found. Our specimen was gathered on Cromford Moor, near Matlock, by Dr. Smith, who is possessed of another from Malvern Hills, Worcestershire, in which (contrary to the remark of Dillenius) the powdery terminations (1) and the shields (2) are on the same individual plant. This powdery part, which Dr. Hedwig considers as the male flower, is frequently seen, though the shields are so very rare that we could hardly present the reader with a greater botanical curiosity. We are therefore inclined, from this circumstance, and from the analogy of *L. ciliaris* (see *With. V.* 3. 30) to think the black warts (3) are rather the male flowers.

This species is remarkable for being always composed of two membranes, the undermost black, the upper white, with a considerable cavity between them. Sometimes the plant grows out into large cylindrical powdery protuberances, which are likewise hollow. Our figure represents a group of different individuals in various states, not all from one root.

Dillenius, in his quotation of *Linn. Fl. Lapp.* confounds this with *L. centrifugus*.



J. Sowerby del. Au. 1811

R U M E X Acetosa.

Common Sorrel.

HEXANDRIA Trigynia.

GEN. CHAR. *Cal.* 3-leaved. *Petals* 3, closed. *Seed* 1, triangular.

SPEC. CHAR. Flowers dioecious. Leaves oblong, arrow-shaped.

SYN. *Rumex Acetosa.* *Linn. Sp. Pl.* 481. *Huds. Fl. An.* 156. *With. Bot. Arr.* 375. *Relb. Cant.* 149. *Lapathum acetosum vulgare.* *Raii Syn.* 143.

A COMMON inhabitant of meadows and pastures throughout this island, in almost all soils and situations, flowering early in June. The root is perennial, running deep into the earth, astringent, as in most of its tribe. Stem mostly simple, erect, round, deeply striated, from one to two feet high. The radical and lower stem-leaves on long footstalks, with a membranous cylindrical sheathing stipula, embracing the stem, and torn at the top; these leaves are of an arrow shape, entire, or but little undulated in their sides, but at the base cut into two or three large sharpish teeth, pointing backwards, and not (as in some species of *Rumex*) divaricated into a right angle with the outline of the leaf. The upper leaves are sessile, gradually more entire, and at the top of the stem only slightly crisped at their base. A compound sort of verticillated spike terminates the stem, its branches being alternate and nearly erect. The barren flowers are produced on a separate root from the fertile ones; the calyx and corolla small, nearly similar in both. Stamina very short, with large yellow antheræ. Styles short, with large crimson bearded stigmata. The whole herb is acid, with a degree of astringency, not unpleasant nor unwholesome, agreeing much with the different species of rhubarb, to which it is nearly allied.



J^o Sowerby del. Aug^o 1879.

CONVALLARIA verticillata.

Narrow-leaved Solomon's Seal.

HEXANDRIA Monogynia.

GEN. CHAR. Cor. 6-cleft. Berry spotted, 3-celled.

SPEC. CHAR. Leaves verticillate.

SYN. Convallaria verticillata. *Linn. Sp. Pl.* 451. *Fl.**Dan.* t. 86, bad.Polygonatum caule simplici, erecto, foliis verticillatis ellipticis. *Hall. Hist.* 1244.P. minus. *Ger. em.* 903.

FOR this new and very interesting addition to the catalogue of British vegetables we are indebted to Arthur Bruce, Esq. Secretary to the Nat. Hist. Society of Edinburgh, who first found it, July 1st, 1792, in the Den Rechip, a deep woody valley, four miles north-east of Dunkeld in Perthshire. From his wild specimens, assisted by a recent garden one, for the dissection of the flower, our figure was drawn.

The root is perennial, fleshy, creeping horizontally among stones, in rocky, shady, alpine places. Stem erect, near 2 feet high, angular, striated, naked at bottom, in the upper part clothed with copious leaves, which are lanceolate, bluntish, entire, smooth, glaucous beneath, with numerous parallel nerves, and stand, nearly sessile, about 3 or 4 together in a whorl all the way up the stem, with here and there a straggling leaf or two by itself. In weak plants most of them are merely opposite, with 2 or 3 whorls occasionally. Stipulæ none. From several of the lowest whorls arise solitary, branched, slender, drooping flower-stalks, each bearing two or three flowers, which appear in the middle of June, and are white, cylindrical, divided about a quarter of their length into six bluntish segments, bearded at the tip on the inside. The stamina are as long as the tube of the corolla; style shorter; germen round, green; berry blue.



7. Lomery del. Aug. 1793.

ANTIRRHINUM majus.

Great Snapdragon.

GEN. CHAR. *Cal.* 5-leaved. *Cor.* with a prominence at its base pointing downwards and bearing honey. *Capsule* two-celled.

SPEC. CHAR. Corolla not elongated into a spur. Flowers spiked. Capsules roundish.

SYN. *Antirrhinum majus.* *Linn. Sp. Pl.* 859. *Huds. Fl. An.* 274. *With. Bot. Arr.* 650. *Relb. Cant.* 243.

GATHERED on walls at Greenwich, where, as in other places in Kent, and about many of the older towns in the south and east parts of England, this magnificent species of *Antirrhinum* may be found in abundance, flowering from the end of May to the middle of July, or later. Ray has omitted this plant, and Mr. Hudson has marked it with an asterisk, both considering it as of foreign origin; an idea, which its being only occasionally perennial with us, though now perfectly naturalized, seems to justify.

Root fibrous, producing a tuft of short spreading leafy stems. Flowering stems erect, 12 or 18 inches high, strong, leafy, round, smooth below, hairy and viscid above, branched towards the bottom, but terminating in a simple dense spike of flowers, which never appear till the second year. The pedicles are short, with a concave bractea at their base, and sometimes a pair of narrow lanceolate bractea close to the calyx, which consists of five broad, concave, entire leaves, brown and viscid on their outside. The corolla is generally of a rose-colour, sometimes white, but always with a large yellow spot on the protuberant part of the under lip; the gardens possess a deep crimson variety of great beauty, very ornamental to rock-work. The leaves are deep green, smooth, lanceolate, and entire, varying much in breadth.

The corolla in most species of this genus is so constructed that, when pressed laterally between the finger and thumb, it gapes, closing itself again from elasticity when left: hence the name *Snapdragon*.



J. Swartz del. Aug 1^o 1793

ORNITHOGALUM umbellatum.

*Common Star of Bethlehem.**HEXANDRIA Monogynia.*

GEN. CHAR. *Cor.* of six petals, erect, permanent, from about the midway spreading. *Filaments* alternately broader at the base.

SPEC. CHAR. Flowers in a corymbus. Flower-stalks rising above the top of the main stalk. *Filaments* tapering, entire.

SYN. *Ornithogalum umbellatum.* *Linn. Sp. Pl.* 441.

Huds. Fl. An. 143. *With. Bot. Arr.* 347.

O. vulgare et verius, majus et minus. *Raii Syn.* 372.

THIS is supposed not to have been originally a British native, though now found in a state of nature in some parts of Norfolk. Our specimen was obligingly communicated from Babergh, near Norwich, by Mr. Wagstaff.

The root is a white roundish bulb. Leaves several, linear, bluntish, and soon withering at the tip, concave on the upper side, with a white rib. Stalk round, smooth, 8 or 10 inches high, terminating in an erect corymbus (for it is by no means an umbel, and therefore Linnæus would have done well to have changed the old name) of 6 to 8 or 10 flowers, which appear in May. Bractææ lanceolate, acute, membranous, and fading, about half as long as the flower-stalks. Petals of a pure enamelled white, with a green line along their backs, much spreading, and permanent. Stamina half their length, broad and flat, tapering to a sharp point, not emarginate, but entire, as Hasselquist, Mygind, and Linnæus himself observed; we have therefore, from his own MS. observations, corrected the specific character. Germen turbinate, with six notches, and 2 short, erect, simple style.

The roots are eatable when boiled, and much used as food in the Levant. Linnæus says, *Mant.* 364, they are the doves' dung which was sold so dear during the siege of Samaria (2d *Book of Kings*, ch. 6, v. 25); though Olaus Celsius (*Hierobot.* vol. 2, p. 30) and many other critics take that term in its literal sense. If Linnæus is right, we obtain a sort of clue to the derivation of *Ornithogalum* (*Bird's-milk*) which has puzzled all etymologists. May not that denomination apply to the white fluid which always accompanies the dung of birds, and is their urine? One may almost perceive a similar combination of colours in the green and white of this flower, which accords precisely in that respect with the description Dioscorides gives of his *Ornithogalum* *.

* Since the above was written we have had the satisfaction of finding Linnæus gives the same explanation in his Lectures on the Natural Orders of Plants, published by Professor Giseke, Hamburg, 1792, p. 237.



J. Linnéus de. Sep. 1, 1793

SCIRPUS palustris.

Marsh Club-rush.

TRIANDRIA Monogynia.

GEN. CHAR. *Glumes* chaffy, imbricated every way, all fertile. *Cor.* none. *Seed* one, beardless.

SPEC. CHAR. Culm round, naked. Spike somewhat oval, terminal.

SYN. *Scirpus palustris.* *Linn. Sp. Pl.* 70. *Huds. Fl. An.* 17. *With. Bot. Arr.* 46. *Relb. Cant.* 18.

Sc. *Equiseti capitulo majori.* *Raii Syn.* 429.

VERY common every where in ditches, marshes, and rivulets. The root is perennial, creeping, throwing out many yellowish fibres, and producing thick tufts of upright, cylindrical, smooth, naked stems, becoming striated when dry, clothed at their base with a close, blunt sheath, which is invested with two or three other shorter, more membranous, and reddish sheaths. The plant seems perfectly destitute of leaves. The spikes are solitary at the end of each stem, erect, oblong, appearing oval from the spreading of their scales in flowering, and sometimes accompanied by a small, membranous, close-pressed bractea. Glumes oval, solitary, acute, with a membranous edge. Filaments slender, as in all grassy plants; antheræ large, yellow, projecting entirely beyond the glumes. Style short, with three long, taper, downy stigmas. Seed roundish, smooth, yellow, with a brown apex. This *Scirpus* flowers in June and July, and varies very much in size occasionally.



7^o Lenczya, pl. fig. 1793



GENISTA anglica.

Needle Furze.

DIADELPHIA Decandria.

GEN. CHAR. *Calyx* two-lipped, with two teeth in the upper lip, and three in the lower. *Standard* oblong, bent backwards from the rest of the flower.

SPEC. CHAR. Spines simple, not found on the flower-bearing branches. Leaves ovato-lanceolate.

SYN. *Genista anglica*. *Linn. Sp. Pl.* 999. *Huds. Fl. An.* 311. *With. Bot. Arr.* 759. *Relb. Cant.* 269.

G. minor Aspalathoides, five *Genista spinosa Anglica*. *Raii Syn.* 475.

COMMON on moist boggy heaths, flowering in May and June. It has the long, woody, branched, and creeping roots of most of its tribe; from which arise several bushy, alternately branched stems a foot high, set with scattered sharp spines, which the first year are leafy, as are also the flowering branches that spring out among them. Leaves oval, pointed, entire, a little revolute in the margin, somewhat glaucous, smooth. Flowers from a few of the uppermost axillæ, solitary, on short footstalks, of an elegant bright yellow; the keel is remarkably long; the wings and standard turn green in drying. Pods oval, turgid, smooth, containing 10 or 12 seeds.

This species is supposed to be almost peculiar to Britain, though found also in Denmark (*Fl. Dan.* 619). We beg leave to think Fuchsius's figure 220, quoted by Dr. Stokes, was rather intended for *G. germanica*, as its compound spines and its habit evince.



COLCHICUM autumnale.

*Meadow Saffron.**HEXANDRIA Trigynia.*

GEN. CHAR. *Cal.* a spatha. *Cor.* in 6 divisions, tube arising from the root. *Capsules* 3, connected and inflated.

SPEC. CHAR. Leaves plane, lanceolate, and erect.

SYN. *Colchicum autumnale.* *Linn. Sp. Pl.* 485. *Huds. Fl. An.* 157. *With. Bot. Arr.* 379.

C. commune. *Raii Syn.* 373.

SOME meadows in Suffolk produce the *Colchicum*, and that in but too great abundance for the interest of the grazier. It is also said to be found in various parts of the north and west of England. This specimen was gathered by W. Matthew, Esq. of Bury.

The plant before us exhibits a mode of fructification scarcely paralleled among British vegetables. The flowers appearing very late in autumn, the impregnated germen remains latent under ground quite close to the bulb till the following spring, when the capsule rises above the surface, accompanied by several long upright leaves, and the seeds are ripened about June, after which the leaves decay (see Dr. Withering's remarks in *Bot. Arr.*). What therefore appears to be flower-stalk, is only the tube of the corolla, as in the *Crocus*. Several flowers are enclosed in one membranous spatha.

Its qualities agree with those of squills (see *With.*).

If we may dissent from such authority as M. de Jussieu, we cannot but think this genus more nearly allied to *Crocus* than to *Veratrum* (*Juss. Gen.* p. 47). His accurate account of its propagation by root may serve to explain that of bulbous plants in general, and of the *Orchidæ*.



W. W. D. del. Sep. 1. 1793.

LITHOSPERMUM officinale.

Common Gromwell.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* funnel-shaped, pervious, and naked.
Cal. in five divisions.

SPEC. CHAR. Seeds smooth. Corolla scarcely longer
 than the calyx. Leaves lanceolate.

SYN. *Lithospermum officinale.* Linn. *Sp. Pl.* 189.
Huds. Fl. An. 79. *With. Bot. Arr.* 189. *Relb.*
Cant. 76.

Lithospermum, feu *Milium Solis.* *Raii Syn.* 228.

FOUND here and there flowering in May, in a dry, gravelly, or chalky soil. Root perennial and strong. Stems erect, roundish, rough with close-pressed bristles, and clothed with alternate, lanceolate, entire leaves, which are slightly revolute in their margin, hairy beneath, rough above with minute cartilaginous tubercles, as in many of this tribe. Each of the numerous flowering branches terminates in a recurved leafy spike of pale yellowish flowers; in the feeding state these branches become erect, much elongated, and the leaves they bear are considerably enlarged, being broader than those on the stem. It is seldom that more than two seeds are perfected in each flower. They are exquisitely polished, of a grey or yellowish hue, very hard, but brittle, seeming of a stony substance; whence the generic name, and whence also the ancient celebrity of these seeds as a cure for the stone, though it is difficult to imagine on what principle stony substances should be given as a cure of that complaint. The excellent Ray, too credulous in medical matters, celebrates them, trusting to others for that honesty and judgment in their studies which he exercised in his own. Others have asserted that the seed effervesces with acids; but Linnæus (*Flo. Suec.*) contradicts this, and we have carefully made the experiment without success.



RANUNCULUS arvensis.

*Corn Crowfoot.**POLYANDRIA Polygynia.*

GEN. CHAR. *Cal.* five-leaved. *Petals* 5, with a honey-bearing pore on the inside of the claw of each. *Seeds* naked.

SPEC. CHAR. Seeds rough on the sides, with prominent points. Leaves once or twice three-cleft, in linear segments.

SYN. *Ranunculus arvensis.* *Linn. Sp. Pl.* 780. *Huds. Fl. An.* 242. *With. Bot. Arr.* 576. *Relb. Cant.* 215. *Brugnon Mem. de l'Acad. de Turin, Vol. 4.* 109. *tab.* 3.

R. arvorum, *Raii Syn.* 248.

THIS species of crowfoot occurs in corn-fields not unfrequently, flowering in June. The root is annual and fibrous. Stem erect, very much branched, slightly hairy, as are the leaves. Every part has a pale appearance, and the flowers are small. The seeds are remarkably armed on the sides with strong prominent spines, larger towards the margin, and projecting much more than those of *R. parviflorus* (t. 120), though sometimes like them terminating in a minute hook.

Few plants possess more acrimony than this. *M. Brugnon*, in the place above quoted, relates its poisonous effects on sheep, who nevertheless eat it greedily, as do cows and horses. It occasions cholic, gangrene of the stomach, and death in a few hours. Three ounces of the juice killed a dog in four minutes. *M. Brugnon* thinks vinegar the best antidote. Happily this plant generally grows with us where it is not accessible to cattle of any kind; but the husbandman would do well to guard against it in fallow fields, and pastures in the neighbourhood of corn-land.



RUPPIA maritima.
Sea Ruppia.

TETRANDRIA *Tetragynia.*

GEN. CHAR. *Cal.* none. *Cor.* none. *Seeds* 4, on foot-stalks.

SPEC. CHAR.

SYN. *Ruppia maritima.* *Linn. Sp. Pl.* 184. *Huds. Fl. An.* 77. *With. Bot. Arr.* 177.

Potamogeton maritimum gramineis longioribus foliis, fructu ferè umbellato. *Raii Syn.* 134, t. 6, f. 1.

Fucus ferulaceus. *Ger. em.* 1573, good.

A GOOD observer may, we believe, find this curious plant in most of our British salt-water ditches, especially in the latter part of summer, when its pedunculated seeds distinguish it from all vulgar pond-weeds. Mr. E. Forster, jun. favoured us with this specimen from a ditch by the road from Maldon to Goldhanger, where Ray observed it.

Whether the root be annual or perennial is not easy to determine. The stems are long and slender, round, very much branched, clothed with alternate linear pointed leaves, which embrace the stem with a membranous sheath at their base. Two flowers commonly stand sessile, one a little above the other, on an axillary flower-stalk, various in length, and sometimes coiled, by means of which they alone are raised above the water when the pollen is ripe. The antheræ are sessile, bursting at top into two hemispheres; the germens seem scarcely pedunculated before impregnation, but are afterwards raised in a wonderful manner from the receptacle, each on its own proper foot-stalk. The seeds are oval, slightly gibbous on one side, especially when young. They ripen in August.

The account in Ray's Synopsis, written by Dillenius, is incorrect in saying the flowers (or stamina) grow remote from the fruit, and that the latter appears first.

Potamogeton maritimum most resembles the *Ruppia*, but even before flowering it may be distinguished by its leaves for the most part being not so membranous, and also less tumid, at the base. We have in the Linnæan Herbarium a specimen from Dr. Hope of that variety mentioned in Lightfoot (*Append.* 1091), which seems to differ from ours merely in the greater length of its spiral flower-stalk, possibly having grown in deeper or more fluctuating water. Its seeds are indeed spotted with red, which we have never observed in any other specimen.



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N E P E T A Cataria.

*Nep, or Cat-mint.*D I D Y N A M I A *Gymnospermia.*

GEN. CHAR. *Cor.* with the middle segment of its lower lip crenate : orifice with a reflexed margin.

Stamina approaching each other.

SPEC. CHAR. Flowers spiked ; the whorls slightly pedunculated. Leaves on foot-stalks, heart-shaped, dentato-ferrated.

SYN. *Nepeta Cataria.* *Linn. Sp. Pl.* 796. *Huds. Fl. An.* 249. *With. Bot. Arr.* 593. *Relb. Cant.* 221.

N. major vulgaris. *Raii Syn.* 237.

FOUND about hedges and road-sides, in a chalky or gravelly soil, in various parts of England, though seldom very plentifully. It is not unfrequent throughout Norfolk and Suffolk, flowering about the latter part of summer, and thriving well though covered with dust, like *Ballota nigra*.

The root is perennial, long, and thready, of a blackish colour externally. Stems several, two or three feet high, square, clothed with heart-shaped petiolated leaves, which are grossly, and more or less acutely, ferrated. Every part, except the corolla, is invested with a soft, short, velvet-like downiness. The calyx is marked with strong green prominent ribs. That represented at the bottom of our plate is accidentally reversed, the shorter teeth being (in nature) the lowermost. The corolla is white or purplish, its lower lip elegantly sprinkled with crimson or purple dots. Its crenated central lobe marks the genus decidedly.

Every part of this herb exhales, when bruised, a pungent aromatic smell, somewhat like penny-royal, with which it is supposed to agree in virtues. Cats delight in this scent almost as much as in the powdered root of *Valeriana officinalis*. Wherever they meet with the *Nepeta*, they entirely destroy it, by chewing the young branches, and rolling themselves upon the plant as long as any smell is left.



J. G. W. Del. 1873.

ATHAMANTA Libanotis.
Mountain Stone-Parsley.

PENTANDRIA Digynia.

GEN. CHAR. *Fruit* ovato-oblong, convex, striated.
Petals uniform, inflexed, so as to seem notched.
Involucrum both general and partial.

SPEC. CHAR. Leaves bipinnated, flat. Umbels hemispherical. Seeds hairy.

SYN. *Athamanta Libanotis.* Linn. *Sp. Pl.* 351.
Relb. Cant. 113 fig. *With. Bot. Arr.* 283. *Huds. Fl. An.* ed. 1. 100.

A. Oreofelinum. *Huds. Fl. An.* 115. *With. Bot. Arr.* 283.

Apium petræum seu montanum album. *Raii Syn.* 218.

IN the time of Ray, this plant was known to grow wild on Gogmagog hills, Cambridgeshire; but from that period no botanist has met with it there till the year 1783, when it was detected by the Rev. Mr. Relhan, to whom we are obliged for the wild specimen here represented. Whether the plant Mr. Hudson gathered between St. Albans and Stoney Stratford be the same, we have no means of determining: probably it might. That gentleman rightly referred Ray's plant to the *A. Libanotis* in his first edition; but in the second, misled as it should seem by Linnæus in *Sp. Pl.* he calls it *A. Oreofelinum*, a very different species, as appears from the Linn. *Herb.* Hence arose the mistake of Dr. Withering, who has both plants in his *Bot. Arr.*

The root is perennial, running perpendicularly down, somewhat woody, bitterish, and pungent, bearded at the top with the fibrous remains of old leaf-stalks. Stem one or two feet high, erect, little branched, smooth, angular, and (as Ray observes) often very deeply furrowed. Leaves bipinnate; leaflets sessile, pinnatifid, with pointed entire lobes, firm, veiny, paler beneath, smooth, except a slight hairiness on the veins and margin. Footstalks dilated at the base, with a membranous border. Umbels terminal, erect, whitish. Involucra numerous, subulate, with a membranous margin, hairy. Flower-stalks, calyx, and germen, hairy, as is likewise the fruit. After flowering, the styles and top of the germen become purple, as Linnæus remarks. The umbels are sometimes proliforous. This plant blooms copiously in August. We have represented a magnified flower to shew the inflexion of the petals, and the half-ripe fruit with its purple divaricated styles.



SIUM angustifolium.

*Narrow-leaved Water Parsnep.**PENTANDRIA Digynia.*

GEN. CHAR. *Fruit* nearly oval, compressed, striated.

Involucrum general and partial, of many leaves.

Petals heart-shaped, uniform.

SPEC. CHAR. Leaves pinnated; leaflets irregularly lobed and serrated. Umbels on foot-stalks opposite to the leaves. Stem erect.

SYN. *Sium angustifolium.* *Linn. Sp. Pl.* 1672. *Huds. Fl. An.* 119. *With. Bot. Arr.* 292. *Relb. Cant.* 116.

S. erectum. *Huds. Fl. An. ed. 1.* 103.

S. five Apium palustre, foliis oblongis. Raii Syn. 211.

THIS is frequently found in ditches and rivulets, and having been originally considered by Linnæus as a variety of *S. latifolium*, was first established as a distinct species by Mr. Hudson. The Rev. Mr. Relhan sent this specimen from near Cambridge. It flowers in July and August.

Root perennial, creeping, so as to occupy much space. Stem upright, with whorls of radical fibres in its lower part under water, round, striated, smooth, much branched above. Leaves alternate, simply pinnated; leaflets sessile, the lowermost pair remote from the rest, and smaller, at least in the lower leaves, in which also the leaflets are obliquely heart-shaped at the base; otherwise they are lanceolate, often so deeply lobed as to become hastate, pointed, very irregularly and sharply serrated, and very smooth. The umbels stand solitary, opposite to each leaf, on divaricated footstalks somewhat shorter than the adjoining leaf. General involucrum of many drooping leaves, which are occasionally entire, serrated or pinnatifid; the partial ones are oval and more entire. Calyx of five minute teeth. Petals heart-shaped, with an inflexed claw from the sinus, all uniform. Stamina twice as long as the corolla, spreading. Fruit smooth, slightly ribbed, oval.



LOBELIA Dortmanna.
Water Lobelia.

SYNGENESIA Monogamia.

GEN. CHAR. *Cal.* 5-cleft. *Cor.* of one petal, irregular. *Capsule* inferior, with 2 or 3 cells.

SPEC. CHAR. Leaves linear, 2-celled, entire. Stem almost naked.

SYN. *Lobelia Dortmanna.* *Linn. Sp. Pl.* 1318. *Huds. Fl. An.* 377. *With. Bot. Arr.* 950. *Lightf. Fl. Scot.* 505, t. 21.

Gladiolus lacustris. *Ger. em.* 105. *Dortmanni.* *Raii Syn.* *287.

THE beautiful lakes of Westmoreland and Cumberland abound with this elegant and singular plant. Their gravelly bottoms are generally covered with thick tufts of its leaves, the flowering part of the stem being all that rises above the water; so that in sudden floods it is sometimes entirely overflowed, not having, like some vegetables, the means of accommodating itself to such quick changes, either by a more or less inclined position, or a spiral structure. Dr. Woodville favoured us with this recent specimen from Kewick Lake. The plant grows also in Wales and Scotland, flowering in July.

Root of long simple whitish fibres, perennial. Leaves almost wholly radical, linear, entire, and very blunt, recurved, smooth, chiefly remarkable for their internal structure, as they consist of two longitudinal hollow cells with a partition between. Stem erect, simple, varying in length according to the depth of the water wherein it grows, round, smooth, hollow, terminated by a simple upright loose spike or racemus of elegant pale purplish drooping flowers, standing on short footstalks with a small blunt bractea at the base of each. The segments of the corolla are slightly bearded at their base, as are the antheræ at their tip. The stigma too is ciliated. The germen in ripening becomes erect; an example, among innumerable others, shewing it is not the weight of drooping flowers that makes them take an inclined position; the fruit of such, though much the heavier, being almost always upright, for the seeds are thus more surely retained till ripe, and then more extensively scattered; whereas by the inclined corolla, or rather, in this genus, by the incurved figure of the antheræ themselves, the pollen is sheltered from wet.—This herb abounds with milky juice.



S. J. Sauerb. 2011 Oct. 1 1793.

SANTOLINA *maritima*.*Sea Cotton-weed.*SYNGENESIA *Polygamia-æqualis*.GEN. CHAR. *Recept.* chaffy. *Down* none. *Cal.* imbricated, hemispherical.

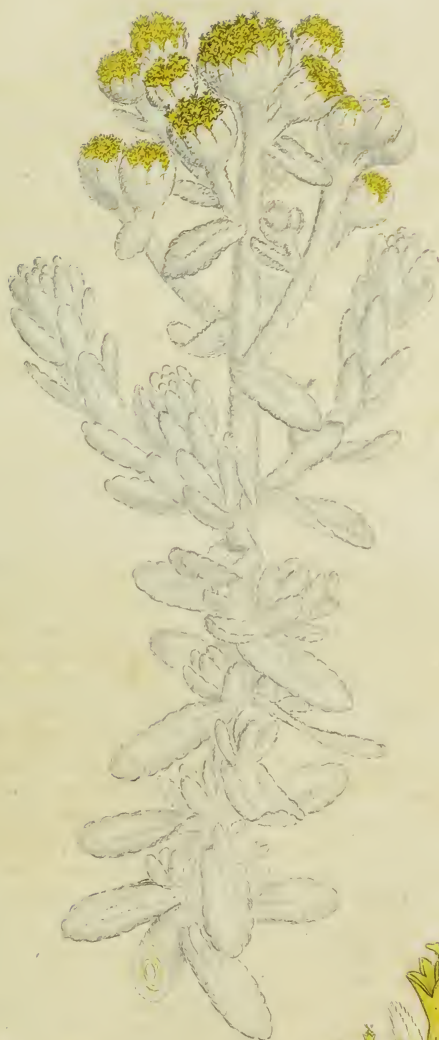
SPEC. CHAR. Flower-stalks collected into a corymbus. Leaves oblong, obtuse, crenated, very downy.

SYN. *Santolina maritima*. *Linn. MSS. Hudf. Fl. An.* 356. *With. Bot. Arr.* 886.*Athanasia maritima*. *Linn. Sp. Pl.* 1182. *Mant.* 2. 464.*Gnaphalium maritimum*. *Raii Syn.* 180.

THIS specimen was gathered last August by Dr. Smith, on the sea beach, just above high-water mark, a mile to the north of Landguard Fort in Suffolk, where this rare plant grows in tolerable plenty, and flowers from the middle of August to the latter part of September. It occurs also on various parts of our southern coast.

The long perennial roots run very deep into the sand, and throw up several branched bushy stems about a foot high, extremely brittle, round, covered with numerous, alternate, oblong, almost spatulate, crenate leaves, which, as well as the stem and calyx, are completely invested with a pure white thick cottony web. A corymbus of bright yellow flowers terminates the stem and side branches. The calyx is formed of numerous concave, somewhat membranous, scales; and the hemispherical receptacle is set with similar scales, woolly at their tip. The florets are numerous, all tubular, regular, hermaphrodite and fertile. Seeds oval, curved, compressed, sharp and membranous at the edge, destitute of wing or down. Every part, especially the flowers, has a strong aromatic scent, like Costmary (*Tanacetum Balfamita*).

Those who go to look for these flowers in July, according to the information of authors, will be disappointed. All the figures of this plant, Miller's not excepted, are extremely bad.



P H Y T E U M A orbicularis.

Round-headed Rampion.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* wheel-shaped, in five linear segments. *Stigma* three-cleft. *Capsule* three-celled.

SPEC. CHAR. Flowers in a roundish head. Leaves ferrated; the radical ones heart-shaped.

SYN. *Phyteuma orbicularis.* *Linn. Sp. Pl.* 242.
Hudf. Fl. An. 97. *With. Bot. Arr.* 220.

Rapunculus corniculatus montanus. *Raii Syn.* 278.

WE are obliged to Thomas Cornwall, Esq. of Chast Park Surrey for this specimen, gathered wild in that county, in several parts of which, as well as in Suffex and Hampshire, this rare plant is found abundantly on a chalky soil, and flowers about July or August. It is one of our more elegant and singularly constructed productions, and may be cultivated without trouble in a dry gravelly or calcareous situation, though we must own the rich blue of its flower-buds is most conspicuous in a wild state.

The long woody root branches near the surface of the ground into several divisions, each bearing a dense tuft of petiolated, smooth, veiny, ferrated, or rather crenated, leaves, the first of which are heart-shaped, the rest ovato-lanceolate, and from the centre of which arises a simple erect stem, slightly angular, and clothed with alternate lanceolate leaves, the uppermost of them very acute, and somewhat recurved. A single round head of flowers stands erect on a few ovate, acute, ciliated bractæ. The parts of fructification agree in structure with the genus of *Campanula*, except that the corolla is divided to the very base, into five linear spreading segments, which in the bud cohere together, forming a curved horn, and separating first at their lower part. Every part of the flower remains permanent, though faded, till the seeds are dispersed, or longer. The herb is milky, but not acrid.



G A L I U M cruciatum.

Cross-wort.

TETRANDRIA Monogynia.

GEN. CHAR. *Cor.* of one petal, flat. *Seeds* two, roundish.

SPEC. CHAR. Leaves in fours, ovate, hairy. Stem simple above, hairy. Bunches of flowers lateral, with two leaves. Flowers polygamous. Fruit smooth.

SYN. *Galium Cruciatum*. *Scop. Carn.* 100. *With. Bot. Arr.* 149.

Valantia Cruciatum. *Linn. Sp. Pl.* 1491. *Huds. Fl. An.* 441. *Relb. Cant.* 377.

Cruciatum. *Raii Syn.* 223.

THIS grows every where about hedges and thickets, flowering early in summer. The root is perennial, creeping and slender. Stems branched at their base, but perfectly simple in the upper part, weak, and resting against bushes, quadrangular, very hairy, jointed, and bearing at every joint four ovate, entire, soft, hairy leaves, from whose bosoms all the way up the stem arise several slender, forked, many-flowered peduncles, each furnished with two small leaves at its first divarication. The flowers are formed exactly like those of other species of *Galium*, except that some are only male, wanting a germen, and of the complete or hermaphrodite ones, some are five-cleft. The style is deeply cloven, and the rudiments of seeds two, though one generally proves abortive, and the fruit becomes globose, smooth, and is sheltered by the reflexed leaves.

That this plant belongs to the natural genus of *Galium* there can be no doubt: see the question well discussed in *Bot. Arr.* 149 and 1139, &c. but it does not follow that all the *Valantiæ* of *Linnaeus* are of the same genus. *V. glabra*, *articulata*, and *Aparine* may be so, but surely *V. muralis* ought from its fruit to form a genus. It is to be wished that and other foreign species should be well examined as to their fructification, which appears in some respects to be very curious.

As the old name *Cruciatum* is in fact an adjective, we have ventured to consider it as such, to avoid jarring terminations. See Remarks on *Lathyrus Nissolia*, t. 112.



Salvia, L. Nov. 1893

SPLACHNUM ampullaceum.

Purple Splachnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* placed on the summit of a large coloured fleshy receptacle. *Veil* deciduous. Male flowers generally on a separate plant.

SPEC. CHAR. Receptacle swelling, obconical. Leaves ferrated, acute.

SYN. *Splachnum ampullaceum*. *Linn. Sp. Pl.* 1572. *Hudf. Fl. An.* 468. *With. Bot. Arr. V.* 3. 78. *Relb. Cant.* 396.

Bryum erectis gigartinis capitulis, foliis Serpylli pellucidis acutis. *Raii Syn.* 93.

B. ampullaceum, foliis Thymi pellucidis, collo strictione. *Dill. Musc.* 343. *t.* 44. *f.* 3. (compared at Oxford, *J. E. Smith.*)

GATHERED on Iver Heath near Uxbridge by Mr. Jacob Rayer, August 24 last, though it commonly bears its capsules in the spring.

The roots are said to be annual, and produce numerous short upright branches, clothed with lanceolate leaves, various in breadth, sharply pointed, ferrated, pale and pellucid. Some branches are terminated by a stellated male flower. Others bear the capsule on a straight upright flower-stalk, which gradually rises to the height of two inches, and is round, smooth, pellucid, of a bright red. This stalk terminates in an obovate or conical purplish succulent body, compared by Dillenius to a vinegar cruet, on the blunt top of which stands a small cylindrical capsule, with eight teeth round its orifice, which at length are reflexed. The veil or calyptra is very minute and fugacious; the lid of the capsule small and blunt. The columella is lengthened out beyond the rim of the capsule, appearing like a pistillum, which it may really be.

Linnaeus, too confident in Dillenius, who was a better observer than physiologist, took the capsule of Mosses for their anthera; but the celebrated Hedwig has now set us right in that particular.



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- CERASTIUM arvense, t. 93.
Curt. Lond. fasc. 6.
- RUMEX Acetosa, t. 127.
Woodv. Med. Bot. 193, t. 69.
- COLCHICUM autumnale, t. 133.
Woodv. Med. Bot. 483, t. 177.

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No. 116, line 9, for 132 read 73.





